



ÖRYGGISBLAÐ ISOBUTYL METHYL KETONE

KAFLI 1: Auðkenning efnisins eða efnablöndunnar og félagsins eða fyrirtækisins

1.1 Vörukenni

Heiti vöru	ISOBUTYL METHYL KETONE
Vörunúmer	589
Samheiti; viðskiptaheiti	MIBK, METHYL ISOBUTYL KETONE CLN, 4-METHYLPENTAN-2-ONE, METHYL ISOBUTYL KETONE SHL, METHYL ISOBUTYL KETONE
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
ESB skráarnúmer	606-004-00-4
EB númer	203-550-1

1.2 Viðeigandi og tilgreind notkun efnis eða blöndu og notkun sem ráðið er frá

Tilgreind notkun	Surface coating Industrial Solvent Additive for Agrochemicals Lab Reagent Chemical Intermediate Fyrir frekari upplýsingar, sjá váhrífasviðsmynd í viðhengi.
Notkun sem mælt er gegn	Ekki hefur verið greind sérstök notkun sem mælt er gegn.

1.3 Upplýsingar um birgi öryggisblaðsins

Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com
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1.4 Neyðarsímanúmer

Neyðarsími	SGS - +32 (0)3 575 55 55 (24h)
Neyðarsímanúmer	Eitrunarmiðstöðin 543 2222
Sds No.	589

KAFLI 2: Hættugreining

2.1 Flokkun efnisins eða blöndunnar

Flokkun (EB 1272/2008)

Líkamleg hættu	Eldf. vökvi 2 - H225
Heilbrigðishættu	Bráð eit. 4 - H332 Agnert. 2 - H319 SEM-VES 3 - H335

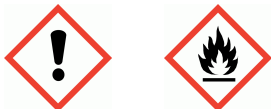
ISOBUTYL METHYL KETONE

Umhverfishætta Óflokkað

2.2. Merkingaratriði

EB númer 203-550-1

Skýringarmynd



Viðvörðunoröð Hætta

Hættusetningar
H225 Mjög eldfimur vökvi og gufa.
H319 Veldur alvarlegri augneringu.
H332 Hættulegt við innöndun.
H335 Getur valdið ertingu í öndunarfærum.

Varnaðarsetning
P210 Haldið frá hitagjöfum, heitum flötum, neistagjöfum, opnum eldi og öðrum íkveikivöldum.
Reykingar bannaðar.
P243 Gerið varúðarráðstafanir gegn stöðurafmagni.
P261 Gætið þess að anda ekki inn gufu/ ýringi.
P303+P361+P353 BERIST EFNID Á HÚÐ (eða í hár): Farið strax úr fötum sem óhreinast af efninu. Skolið húðina með vatni/ Farið í sturtu.
P305+P351+P338 BERIST EFNID Í AUGU: Skolið varlega með vatni í nokkrar mínútur.
Fjarlægið snertilinsur ef það er auðvelt. Skolið áfram.
P403+P235 Geymist á vel-loftræstum stað. Geymist á köldum stað.
P501 Fargið innihaldi/ íláti í samræmi við landsreglugerðir.

Viðbótarupplýsingar EUH066 Endurtekin váhrif geta valdið húðþurrki og sprungum.

2.3. Aðrar hættur

Þetta efni er ekki flokkað þrávirkt, safnast upp í náttúrunni og eitrað (PBT) né mjög þrávirkt og safnast upp í náttúrunni í miklum mæli (vPvB) samkvæmt núverandi ESB viðmiðum.

KAFLI 3: Samsetning innihaldsefna/upplýsingar um innihaldsefni

3.1. Efni

Heiti vöru ISOBUTYL METHYL KETONE
REACH skráningarnúmer 01-2119473980-30-XXXX
ESB skráarnúmer 606-004-00-4
CAS númer 108-10-1
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KAFLI 4: Ráðstafanir í skyndihjálpi

4.1. Lýsing á ráðstöfunum í skyndihjálpi

Innöndun Færið viðkomandi samstundis undir ferskt loft. Leitið læknishjálpar.
Inntaka Hreinsið munninn vel með vatni. Leitið læknishjálpar ef óþægindi halda áfram.
Snerting við húð Fjarlægið mengaðan fatnað samstundis og þvoið húð með sápu og vatni. Leitið læknishjálpar ef erting er viðvarandi eftir þvott.
Snerting við augu Skolið samstundis með miklu vatni. Fjarlægið augnlinsur og haldið augnlokunum vel opnum. Haldið áfram að skola í að minnsta kosti 15 mínútur. Leitið læknishjálpar ef óþægindi halda áfram.

ISOBUTYL METHYL KETONE

4.2. Helstu skaðleg einkenni og áhrif, bæði bráð og tafin

Innöndun Hættulegt við innöndun. Ertir öndunarfæri.

Snerting við augu Veldur alvarlegri augnertingu.

4.3. Upplýsingar um tafarlausa læknisumönnun og sérstaka meðferð sem þörf er á

Athugasemdir fyrir lækninn Meðhöndlið í samræmi við einkenni.

KAFLI 5: Ráðstafanir vegna slökkviaðgerða

5.1. Slökkvibúnaður

Hentugt slökkviefni Slökkvið með alkahólþolinni froðu, koldíoxíði, þurrdufti eða vatnspöku.

5.2. Sérstakar hættur af völdum efnisins eða blöndunnar

Hættuleg brennanleg efni Oxíð af kolefni. Niðurbrot við upphitun eða bruna geta leyst úr læðingi koldíoxíð og kolmónoxíð og aðrar eitraðar lofttegundir eða gufur.

5.3. Ráðgjöf fyrir slökkviliðsmenn

Sérstakur hlífðarbúnaður fyrir Notið sjálfstæðan öndunarbúnað með yfirprýsting (SÖY) og viðeigandi hlífðarfatnað. slökkviliðsmenn

KAFLI 6: Ráðstafanir ef efni fer óvart til spillis eða er losað fyrir slysi

6.1. Öryggisráðstafanir fyrir fólk, hlífðarbúnaður og neyðarráðstafanir

Persónulegar Notið hlífðarfatnað sem lýst er í kafla 8 í þessum öryggisleiðbeiningum. Gerið varúðarráðstafanir varúðarráðstafanir gegn stöðurafragni. Engar reykingar, neista, loga eða aðra íkveikjuvalda nálægt lekanum.

6.2. Varúðarráðstafanir vegna umhverfisins

Umhverfisvarúðarráðstafanir Leka eða óstýrða losun í vatnsföll verður að tilkynna samstundis til Umhverfisstofnunar eða annarra viðeigandi yfirvalda.

6.3. Aðferðir og efni til afmörkunar og hreinsunar

Aðferðir við að þrifa upp Sjúgið upp efnalekann með hvarftregu, röku, óbrennanlegu efni. Skolið mengað svæði með miklu vatni. Safnið saman og setjið í viðeigandi losunarílát og lokið tryggilega. Fyrir förgun úrgangs, sjá kafla 13.

6.4. Tilvísun í aðra liði

Tilvísun í aðra kafla Fyrir persónulegan hlífðarbúnað, sjá kafla 8.

KAFLI 7: Meðhöndlun og geymsla

7.1. Varúðarráðstafanir um örugga meðhöndlun

Varúðarráðstafanir fyrir notkun Forðist innöndun gufa/úða og snertingu við húð og augu. Útilokið alla íkveikjuvalda. Augnaskolstöð og neyðarsturta verður að vera til staðar þegar þessi vara er meðhöndluð.

7.2. Örugg geymsluskilyrði, þ.m.t. vegna mögulegs ósamrýmanleika.

Varúðarráðstafanir fyrir Geymið í þétt lokuðu, upprunalegu íláti á vel loftræstum stað. geymslu

Geymsluflokkur Geymsla fyrir eldfima vökva.

7.3. Sérstæk endanleg notkun

Sérstök endanleg notkun Skilgreindri notkun fyrir þessa vöru er lýst nákvæmlega í kafla 1.2.

KAFLI 8: Váhrifavarnir/persónuhlífar

ISOBUTYL METHYL KETONE

8.1. Takmörkunarfæribreytur

Viðmiðunarmörk fyrir váhrif í starfi

Langtíma váhrifamörk(8-klst TWA): 20 ppm 83 mg/m³

Skammtíma váhrifamörk (15-mínútur): 50 ppm 208 mg/m³

H

H = efnið getur auðveldlega borist inn í líkamann gegnum húð

DNEL	Atvinnugrein - Innöndun; Skammtíma kerfisbundin áhrif: 208 mg/m ³
	Consumer - Innöndun; Skammtíma kerfisbundin áhrif: 155.2 mg/m ³
	Atvinnugrein - Innöndun; Skammtíma staðbundin áhrif: 208 mg/m ³
	Consumer - Innöndun; Skammtíma staðbundin áhrif: 155.2 mg/m ³
	Atvinnugrein - Húð; Langtíma kerfisbundin áhrif: 11.8 mg/kg/dag
	Atvinnugrein - Innöndun; Langtíma kerfisbundin áhrif: 83 mg/m ³
	Consumer - Oral; Langtíma kerfisbundin áhrif: 4.2 mg/kg/dag
	Consumer - Húð; Langtíma kerfisbundin áhrif: 4.2 mg/kg/dag
PNEC	- Ferskt vatn; 0.6 mg/l
	- Sjór; 0.06 mg/l
	- Jarðvegur; 1.3 mg/kg
	- Botnfall (ferskt vatn); 8.27 mg/kg
	- Botnfall (sjór); 0.83
	- Ósamfelld losun; 1.5

8.2. Váhrifavarnir

Hlíðarþúnaður



Viðeigandi verkfræðilegt eftirlit Tryggið næga loftun. Forðist innöndun gufa. Fylgið öllum starfstengdum váhrifsmörkum fyrir vöruna eða innihaldsefni.

Augn/andlitsvörn Notið þétt hlífðargleraugu eða andlitshlíf. EN 166

Vörn handa Velja skal hentugustu hanskana í samráði við birgja/framleiðanda hanskana, sem getur veitt upplýsingar um gegndræpitíma efnisins í hönskunum. Valdir hanskar skulu hafa gegndræpitíma að minnsta kosti 1 klst. Pólyvínylklóríð (PVK). Nítríl gúmmí. Neopren. hanski þykkt 0.3mm EN 374

Önnur húð og líkamsvörn Notið viðeigandi hlífðarfatnað til varnar gegn slettum eða mengun.

Hlíðarþúnaður fyrir öndun Ef loftræsting er ófullnægjandi skal nota viðeigandi öndunargrímu. Notið öndunargrímu með eftirfarandi hylki: Gassía, gerð A2. EN 136/140/141/145/143/149

KAFLI 9: Eðlis- og efnafræðilegir eiginleikar

9.1. Upplýsingar um eðlis- og efnafræðilega grunneiginleika

Útlit	Vökvi.
Litur	Litlaus.
Lyktarmörk	0.68
pH	Ekki fyrirbyggjandi.
Bræðslumark	-84°C
Upphafssuðumark og bil	114 - 117°C

ISOBUTYL METHYL KETONE

Blossamark	16°C Closed cup.
Uppgufunarhraði	5.6 (etanól = 1)
Uppgufunarstuðull	Engar upplýsingar aðgengilegar.
Eldfimi (fast efni, lofttegundir)	Engar upplýsingar aðgengilegar.
Efri/neðri eldfimi eða sprengimörk	Lægri eldfimi-/sprengimörk: 1.2 % Efri eldfimi-/sprengimörk: 8.0 %
Önnur eldfimi	Engar upplýsingar aðgengilegar.
Gufuþrýstingur	21.5 mbar
Gufuþéttni	3.5
Eðlismassi	0.8 @ 20°C
Rúmþyngd	Engar upplýsingar aðgengilegar.
Leysni	1.41 Lítillega leysanlegt í vatni.
Deilistuðull	: 1.38
Sjálfsíkveikjuhitastig	448°C
Niðurbrotshiti	Engar upplýsingar aðgengilegar.
Seigja	0.55 mPa s @ 25°C
Sprengieiginleikar	Á ekki við.
Sprengifimt vegna áhrifa loga	Engar upplýsingar aðgengilegar.
Oxunareiginleikar	Uppfyllir ekki viðmið fyrir flokkun sem oxandi.

9.2. Aðrar upplýsingar

Brotstuðull	Engar upplýsingar aðgengilegar.
Agnastærð	Engar upplýsingar aðgengilegar.
Mólmassi	100.16
Rokgirmi	Engar upplýsingar aðgengilegar.
Mettunarstyrkur	Engar upplýsingar aðgengilegar.
Markhiti	Engar upplýsingar aðgengilegar.
Rokgjörm lífræn sambönd	Engar upplýsingar aðgengilegar.

KAFLI 10: Stöðugleiki og hvarfgirmi

10.1. Hvarfgirmi

Hvarfgirmi Það er engin þekkt hættu af hvarfgirmi við þessa vöru.

10.2 Efnafraðilegur stöðugleiki

Stöðugleiki Stöðugt við eðlilegan herbergishita og þegar notað eins og mælt er með.

10.3. Möguleiki á hættulegu efnahvarfi

Möguleiki á hættulegum hvörfum Myndar ekki fjölliður.

10.4. Skilyrði sem ber að varast

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Aðstæður sem ber að forðast Forðist hita, loga og aðra íkveikjuvalda.

10.5. Ósamrýmanleg efni

Efni sem skal forðast Sterk oxandi efni.

10.6. Hættuleg niðurbrotsefni

Hættuleg niðurbrotsefni Oxíð af kolefni. Niðurbrot við upphitun eða bruna geta leyst úr læðingi koldíoxíð og kolmónoxíð og aðrar eitraðar lofttegundir eða gufur.

KAFLI 11: Eiturefnafræðilegar upplýsingar

11.1. Upplýsingar um eiturefnafræðileg áhrif

Bráð eitrun - um húð

Bráð eitrun húðar (LD₅₀ mg/kg) 2.000,0

Dýrategund Rotta

Bráð eitrun - við innöndun

ATE innöndun (lofttegundir ppmV) 4.500,0

ATE innöndun (gufur mg/l) 11,0

ATE innöndun (ryk/mistur mg/l) 1,5

Æting/erting húðar

Gögn um dýr Ekki ertandi.

Alvarlegur augnskaði / erting

Alvarlegur augnskaði/erting Lítillega ertandi.

Næming öndunarfæra

Næming öndunarvegjar Engar upplýsingar aðgengilegar.

Næming húðar

Næming húðar Ekki næmandi.

Stökkbreytandi áhrif á kímfrumur

Erfðaeiturhrif - í tilraunaglassi Engar vísbendingar eru um stökkbreytandi eiginleika efnisins.

Krabbameinsvaldandi áhrif

Krabbameinsvaldandi áhrif Byggt á tiltækum gögnum eru skilyrði flokkunar ekki uppfyllt.

Eiturhrif á æxlun

Eitrunaráhrif á æxlun - frjósemi Engar vísbendingar eru um að efnið valdi eituráhrifum á æxlun.

Sértæk eiturhrif á marklíffæri - stök váhrif

STOT-stök váhrif Engar upplýsingar aðgengilegar.

Sértæk eiturhrif á marklíffæri - endurtekin váhrif

STOT-endurtekin váhrif NOAEL (Engin merkjanleg, skaðleg áhrif) 250 mg/kg, Innöndun, Rotta

Ásvelgingshætta

Ásvelgingshætta Engar upplýsingar aðgengilegar.

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Innöndun	Hættulegt við innöndun. Getur valdið ertingu í öndunarfærum.
Inntaka	Getur valdið magaverkjum eða uppköstum.
Snerting við húð	Langvarandi snerting getur valdið húðþurrki.
Snerting við augu	Ertir augu.

KAFLI 12: Vistfræðilegar upplýsingar

Visteitiráhrif Þættir vörunnar eru ekki flokkaðir sem hættulegir umhverfinu. Þó hafa stórir, tíðir efnalekar hættuleg áhrif á umhverfið.

12.1 Eiturhrif

Bráð eiturhrif í vatni

Bráðu eitrun - fiskur LC50, 96 klukkutímar: > 179 mg/l, Brachydanio rerio (sebrafiskur)
OECD 203

Bráð eitrun - hryggleysingjar EC₅₀, 48 klukkutímar: > 200, Daphnia magna (halafær)
OECD 202

Langvarandi eiturhrif í vatni

Langvinn eitrun - hryggleysingjar NOEC (Styrkur sem hefur engin merkjanleg áhrif), 21 dagar: 30 mg/l, Daphnia magna (halafær)

12.2. Þrávirkni og niðurbrotanleiki

Þrávirkni og niðurbrot Efnið er auðlífbrjótanlegt.

Lífniðurbrot - Niðurbrot 83 %: 28 dagar
OECD 301F

12.3. Uppsöfnun í lífverum

Möguleiki á uppsöfnun í lífverum Þessi vara safnast ekki upp í lífríkinu.

Deilistuðull : 1.38

12.4. Hreyfanleiki í jarðvegi

Hreyfanleiki Varan hefur lága leysni í vatni.

12.5. Niðurstöður úr mati á PBT- og vPvB-eigineikum.

Niðurstöður PBT og vPvB mats Þetta efni er ekki flokkað þrávirkt, safnast upp í náttúrunni og eitrað (PBT) né mjög þrávirkt og safnast upp í náttúrunni í miklum mæli (vPvB) samkvæmt núverandi ESB viðmiðum.

12.6. Önnur skaðleg áhrif

Önnur skaðleg áhrif Engin þekkt.

KAFLI 13: Förgun

13.1. Aðferðir við meðhöndlun úrgangs

Almennar upplýsingar Við meðhöndlun úrgangs skal taka tillit til varúðarráðstafana sem eiga við meðhöndlun vörunnar. Gerið ekki gat á né kveikið í, jafnvel þó tomt.

Losunaraðferðir Losið úrgang til leyfisskilds urðunaraðlia í samræmi við kröfur svæðisbundinna yfirvalda.

KAFLI 14: Upplýsingar um flutninga

Almennt Notið hlífðarfatnað sem lýst er í kafla 8 í þessum öryggisleiðbeiningum.

14.1. UN-númer

ISOBUTYL METHYL KETONE

UN nr. (ADR/RID)	1245
UN nr. (IMDG)	1245
UN nr. (ICAO)	1245
UN nr. (ADN)	1245

14.2. Rétt UN-sendingarheiti

Rétt heiti (ADR/RID)	METHYL ISOBUTYL KETONE
Rétt heiti (IMDG)	METHYL ISOBUTYL KETONE
Rétt heiti (ICAO)	METHYL ISOBUTYL KETONE
Rétt heiti (ADN)	METHYL ISOBUTYL KETONE

14.3. Hættuflokkur eða -flokkar vegna flutninga

ADR/RID flokkur	3
ADR/RID flokkunarkóði	F1
ADR/RID merking	3
IMDG flokkur	3
ICAO flokkun/skipting	3
ADN flokkur	3

Flutningsmerkingar

14.4 Pökkunarflokkur

ADR/RID pökkunarhópur	II
IMDG pökkunarflokkur	II
ADN pökkun	II
ICAO pökkunarflokkur	II

14.5. Umhverfishættur

Efni hættulegt umhverfinu / mengar sjó
Nei.

14.6. Sérstakar varúðarráðstafanir fyrir notanda

EMS - skilaboðþjónusta	F-E, S-D
ADR flutningsflokkur	2
Neyðarkóði	•3YE
Hættuflokkanúmer (ADR/RID)	33
Takmörkunarkóði fyrir göng	(D/E)

14.7. Flutningar búlkafarms skv. II. viðauka við MARPOL-samninginn frá '73/78 og IBC kóðanum.

KAFLI 15: Upplýsingar varðandi regluverk
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15.1. Sértæk ákvæði/löggjöf fyrir efnið eða blönduna vegna öryggis, heilbrigðis og umhverfis

ISOBUTYL METHYL KETONE

ESB löggjöf

Reglugerð (EB) nr. 1907/2006 Evrópuþingsins og Ráðsins frá 18. desember 2006 um skráningu, mat, leyfisveitingu og takmarkanir á efnum (REACH) (með áorðnum breytingum).
 Reglugerð (EB) nr. 1272/2008 Evrópuþingsins og Ráðsins frá 16. desember 2008 um flokkun, merkingu og umbúðir efna og blanda (með áorðnum breytingum).
 Reglugerð Framkvæmdastjórnarinnar (EB) nr. 2015/830 frá 28 maí 2015.
 Þessi vara getur haft áhrif Seveso reglugerðir geymsla.

15.2. Efnaöryggismat

Efnaöryggismat hefur farið fram.

KAFLI 16: Aðrar upplýsingar

Styttingar og skammstafanir sem eru notaðar í öryggisblaðinu

ATE: Matsgildi bráðra eiturhrifa.
 ADR: Evrópusamningur um millilandaflutninga á hættulegum farmi á vegum
 ADN: Evrópusamningur um millilandaflutninga á hættulegum farmi á landi og skipgengum vatnaleiðum.
 CAS: Upplýsingaþjónusta um iðefni.
 DNEL: Afleidd áhrifaleysismörk.
 IATA: Alþjóðasamband flugfélaga.
 IMDG: Alþjóðlegur kóði um siglingu með hættulegan varning.
 Kow: Oktanól-vatn deilistuðull.
 LC50: Styrkur sem veldur dauða 50% tilraunadýra.
 LD50: Skammtur sem veldur dauða 50% tilraunadýra (miðgildisbanaskammtur).
 PBT: Þrávirk efni sem safnast fyrir í lífverum og eru eitruð.
 PNEC: Styrkur þar sem engin áhrif eru fyrir sjáanleg.
 REACH: Reglugerð um skráningu, mat, leyfisveitingu og takmarkanir á kemískum efnum (EB) nr. 1907/2006
 RID: Reglur um millilandaflutninga á hættulegum farmi með járnbrautum.
 vPvB: Mjög þrávirk efni sem safnast fyrir í lífverum í miklum mæli.
 IARC: Alþjóðakrabbameinsrannsóknastofnunin.
 MARPOL 73/78: Alþjóðasamningur um varnir gegn mengun frá skipum, 1973, með breytingum samvæmt bókun frá 1978.
 cATpE: Umreiknað matsgildi bráðra eiturhrifa.
 BCF: Lífpéttnistuðull.
 BOD: Lífræn súrefnisþörf.
 EC₅₀: 50% af hámarks hrifstyrk.
 LOAEC: Lægsti styrkur sem sýnir merkjanleg skaðleg áhrif.
 LOAEL: Lægstu mörk um merkjanleg skaðleg áhrif.
 NOAEC: Styrkleikamörk um engin merkjanleg, skaðleg áhrif.
 NOAEL: Mörk um engin merkjanleg, skaðleg áhrif.
 NOEC: Styrkur sem hefur engin merkjanleg áhrif
 LOEC: Minnsti styrkur sem hefur merkjanleg áhrif
 DMEL: Afleidd mörk um lágmarks áhrif.
 EI50: váhrif 50
 hPa: Hektopaskal
 LL50: Lethal Loading fimmtíu
 OECD: Efnahags- og framfarastofnunin
 POW: OC Talk OL-vatn fasti
 SCBA: sjálf-öndunarbúnað
 STP Skólphreinsunarstöð
 VOC: rokjarnra lífrænna efnasambanda

Flokkunarskammstafanir og upphafsstafaorð

Bráð eit. = Bráð eitrun
 Bráð eit. á vatn = Bráð eitrun á vatnaumhverfi
 Langv. eit. á vatn = Langvinn eitrun á vatnaumhverfi

ISOBUTYL METHYL KETONE

Helstu fræðilegar heimildir og uppruni gagna	Upplýsingar dreifingaraðila.
Athugasemdir við endurskoðun	Athugið: Línur innan við spássíu gefa til kynna marktækar breytingar frá fyrri endurskoðun.
Dagsetning endurskoðunar	4.1.2018
Útgáfunúmer	3.000
Yfirtökudagsetning	22.11.2016
SDS númer	589
SDS staða	Samþykkt.
Hættusetningar í fullri lengd	H225 Mjög eldfimur vökvi og gufa. H319 Veldur alvarlegri augnertingu. H332 Hættulegt við innöndun. H335 Getur valdið ertingu í öndunarferum.
Undirskrift	Jitendra Panchal



Exposure scenario Distribution of substance

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Distribution of substance
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC2 Formulation of preparations.
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Worker

Process category	PROC1 Use in closed process, no likelihood of exposure. PROC2 Use in closed, continuous process with occasional controlled exposure. PROC3 Use in closed batch process (synthesis or formulation). PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC15 Use as laboratory reagent.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details	Nær yfir styrkleika allt að 100 %. Unless otherwise stated.
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Amounts used

Distribution of substance

Daily amount per site: 42 tonnes
Annual amount per site: 12600 tonnes

Environmental factors not influenced by risk management measures

Dilution Móttöku-yfirborðsvatnsflæði: 18400 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts PROC1 Use in closed process, no likelihood of exposure. PROC2 Use in closed, continuous process with occasional controlled exposure. PROC3 Use in closed batch process (synthesis or formulation). PROC15 Use as laboratory reagent. Palm of one hand. Covers skin contact area up to 240 cm². PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes activities are at room temperature.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 90% Store substance within a closed system.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Product sampling Avoid carrying out activities involving exposure for more than 4 hours.

Risk management measures

Distribution of substance

Wear suitable gloves (tested to EN374), coverall and eye protection.

Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method	Used EUSES model.
Environmental release	Water: 0.42 kg/day Air: 4.2 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.003 mg/l, PNEC 0.6 mg/l, RCR 0.005 Freshwater sediment: Exposure 0.043 mg/kg, PNEC 8.27 mg/kg, RCR 0.005 Marine water: Exposure 0.000302 mg/l, PNEC 0.06 mg/l, RCR 0.005 Marine sediment: Exposure 0.004 mg/kg, PNEC 0.827 mg/kg, RCR 0.005 Frárennsli: Exposure 0.024 mg/l, PNEC 27.5 mg/l, RCR 0.001 Ræktunarjarðvegur: Exposure 0.006 mg/kg, PNEC 1.3 mg/kg, RCR 0.004

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
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Distribution of substance

Exposure

PROC1 Use in closed process, no likelihood of exposure.

Worker - inhalation, long-term - local and systemic:

Exposure 0.042 mg/m³, DNEL 83 mg/m³, RCR 0.0005

PROC2 Use in closed, continuous process with occasional controlled exposure.

PROC15 Use as laboratory reagent.

Worker - inhalation, long-term - local and systemic:

Exposure 41.73 mg/m³, DNEL 83 mg/m³, RCR 0.503

PROC3 Use in closed batch process (synthesis or formulation).

Worker - inhalation, long-term - local and systemic:

Exposure 10.43 mg/m³, DNEL 83 mg/m³, RCR 0.126

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Worker - inhalation, long-term - local and systemic:

Exposure 8.347 mg/m³, DNEL 83 mg/m³, RCR 0.101

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Worker - inhalation, long-term - local and systemic:

Exposure 6.26 mg/m³, DNEL 83 mg/m³, RCR 0.0754

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

Worker - inhalation, long-term - local and systemic:

Exposure 20.87 mg/m³, DNEL 83 mg/m³, RCR 0.251

Product sampling

Worker - inhalation, long-term - local and systemic:

Exposure 62.6 mg/m³, DNEL 83 mg/m³, RCR 0.754

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Assessment method

Used ECETOC TRA model.

Distribution of substance

Exposure

PROC1 Use in closed process, no likelihood of exposure.

Product sampling

PROC15 Use as laboratory reagent.

Worker - dermal, long-term - systemic:

Exposure 0.343 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0291

PROC2 Use in closed, continuous process with occasional controlled exposure.

Worker - dermal, long-term - systemic:

Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116

PROC3 Use in closed batch process (synthesis or formulation).

Worker - dermal, long-term - systemic:

Exposure 0.034 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.00288

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Worker - dermal, long-term - systemic:

Exposure 0.686 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0581

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

Worker - dermal, long-term - systemic:

Exposure 0.137 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0116

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Worker - dermal, long-term - systemic:

Exposure 0.014 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.00119

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario Formulation & (re)packing of substances and mixtures

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Formulation & (re)packing of substances and mixtures
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC2 Formulation of preparations.
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Worker

Process category	<p>PROC1 Use in closed process, no likelihood of exposure.</p> <p>PROC2 Use in closed, continuous process with occasional controlled exposure.</p> <p>PROC3 Use in closed batch process (synthesis or formulation).</p> <p>PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.</p> <p>PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).</p> <p>PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.</p> <p>PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.</p> <p>PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).</p> <p>PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.</p> <p>PROC15 Use as laboratory reagent.</p>
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Formulation & (re)packing of substances and mixtures

Concentration details Nær yfir styrkleika allt að 100 %. Unless otherwise stated.

Amounts used

Daily amount per site: 19.95 tonnes

Annual amount per site: 5985 tonnes

Environmental factors not influenced by risk management measures

Dilution Móttöku-yfirborðsvatnsflæði: 18400 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts PROC1 Use in closed process, no likelihood of exposure. PROC2 Use in closed, continuous process with occasional controlled exposure. PROC3 Use in closed batch process (synthesis or formulation). PROC15 Use as laboratory reagent. Palm of one hand. Covers skin contact area up to 240 cm². PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes activities are at room temperature.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Formulation & (re)packing of substances and mixtures

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Formulation activity is assumed to be a predominantly enclosed process. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 90% Store substance within a closed system.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Product sampling Avoid carrying out activities involving exposure for more than 4 hours.

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.

Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method	Used EUSES model.
Environmental release	Water: 99.75 kg/day Air: 498.75 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.583 mg/l, PNEC 0.6 mg/l, RCR 0.972 Freshwater sediment: Exposure 8.03 mg/kg, PNEC 8.27 mg/kg, RCR 0.971 Marine water: Exposure 0.058 mg/l, PNEC 0.06 mg/l, RCR 0.972 Marine sediment: Exposure 0.803 mg/kg, PNEC 0.827 mg/kg, RCR 0.967 Frárennsli: Exposure 5.82 mg/l, PNEC 27.5 mg/l, RCR 0.212 Ræktunarjarðvegur: Exposure 1.3 mg/kg, PNEC 1.3 mg/kg, RCR 1

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method Used ECETOC TRA model.

Formulation & (re)packing of substances and mixtures

Exposure

PROC1 Use in closed process, no likelihood of exposure.

PROC2 Use in closed, continuous process with occasional controlled exposure.

Worker - inhalation, long-term - local and systemic:

Exposure 0.042 mg/m³, DNEL 83 mg/m³, RCR 0.0005

PROC15 Use as laboratory reagent.

Worker - inhalation, long-term - local and systemic:

Exposure 41.73 mg/m³, DNEL 83 mg/m³, RCR 0.503

PROC3 Use in closed batch process (synthesis or formulation).

Worker - inhalation, long-term - local and systemic:

Exposure 10.43 mg/m³, DNEL 83 mg/m³, RCR 0.126

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Worker - inhalation, long-term - local and systemic:

Exposure 8.347 mg/m³, DNEL 83 mg/m³, RCR 0.101

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Worker - inhalation, long-term - local and systemic:

Exposure 6.26 mg/m³, DNEL 83 mg/m³, RCR 0.0754

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.

Worker - inhalation, long-term - local and systemic:

Exposure 20.87 mg/m³, DNEL 83 mg/m³, RCR 0.251

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Assessment method

Used ECETOC TRA model.

Formulation & (re)packing of substances and mixtures

Exposure

PROC1 Use in closed process, no likelihood of exposure.

PROC2 Use in closed, continuous process with occasional controlled exposure.

PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.

PROC15 Use as laboratory reagent.

Worker - dermal, long-term - systemic:

Exposure 0.343 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0291

PROC3 Use in closed batch process (synthesis or formulation).

Worker - dermal, long-term - systemic:

Exposure 0.034 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.00288

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

Worker - dermal, long-term - systemic:

Exposure 0.686 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0581

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Worker - dermal, long-term - systemic:

Exposure 0.137 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0116

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).

Worker - dermal, long-term - systemic:

Exposure 0.014 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.00119

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario Uses in Coatings - Industrial

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Uses in Coatings - Industrial
Product category	PC9a Coatings and paints, thinners, paint removers.
Main sector	SU3 Industrial uses
<u>Environment</u>	
Environmental release category	ERC4 Industrial use of processing aids in processes and products, not becoming part of articles.
<u>Worker</u>	

Uses in Coatings - Industrial

Process category

PROC1 Use in closed process, no likelihood of exposure.
 PROC2 Use in closed, continuous process with occasional controlled exposure.
 PROC3 Use in closed batch process (synthesis or formulation).
 PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.
 PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).
 PROC7 Spraying in industrial settings and applications.
 PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
 PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
 PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).
 PROC10 Roller application or brushing of adhesive and other coating.
 PROC13 Treatment of articles by dipping and pouring.
 PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.
 PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %. Unless otherwise stated.

Amounts used

Daily amount per site: 4.99 tonnes
 Annual amount per site: 1470 tonnes

Environmental factors not influenced by risk management measures

Dilution Móttöku-yfirborðsvatnsflæði: 18400 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Uses in Coatings - Industrial

Potentially exposed body parts

PROC1 Use in closed process, no likelihood of exposure. PROC3 Use in closed batch process (synthesis or formulation). PROC15 Use as laboratory reagent. Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Use in closed, continuous process with occasional controlled exposure. PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC13 Treatment of articles by dipping and pouring. PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC10 Roller application or brushing of adhesive and other coating. Both hands. Covers skin contact area up to 960 cm². PROC7 Spraying in industrial settings and applications. Hands and forearms. Covers skin contact area up to 1500 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 90% Store substance within a closed system. PROC7 Spraying in industrial settings and applications. Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.
 PROC7 Spraying in industrial settings and applications.
 Manual spraying
 Wear a full-face respirator conforming to EN136 with Type A/P2 filter or better.
 Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method Used EUSES model.

Environmental release Water: 99.8 kg/day
 Air: 489.02 kg/day
 Soil: 0 kg/day

Uses in Coatings - Industrial

Environmental exposure

Fresh water:

Exposure 0.583 mg/l, PNEC 0.6 mg/l, RCR 0.972

Freshwater sediment:

Exposure 8.04 mg/kg, PNEC 8.27 mg/kg, RCR 0.972

Marine water:

Exposure 0.058 mg/l, PNEC 0.06 mg/l, RCR 0.972

Marine sediment:

Exposure 0.803 mg/kg, PNEC 0.827 mg/kg, RCR 0.967

Frárennsli:

Exposure 5.82 mg/l, PNEC 27.5 mg/l, RCR 0.212

Ræktunarjarðvegur:

Exposure 1.3 mg/kg, PNEC 1.3 mg/kg, RCR 1

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method

Used ECETOC TRA model.

Uses in Coatings - Industrial

Exposure

PROC1 Use in closed process, no likelihood of exposure.

Worker - inhalation, long-term - local and systemic:

Exposure 0.042 mg/m³, DNEL 83 mg/m³, RCR 0.0005

PROC2 Use in closed, continuous process with occasional controlled exposure.

PROC15 Use as laboratory reagent.

Worker - inhalation, long-term - local and systemic:

Exposure 41.73 mg/m³, DNEL 83 mg/m³, RCR 0.503

PROC3 Use in closed batch process (synthesis or formulation).

Worker - inhalation, long-term - local and systemic:

Exposure 10.43 mg/m³, DNEL 83 mg/m³, RCR 0.126

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Worker - inhalation, long-term - local and systemic:

Exposure 8.347 mg/m³, DNEL 83 mg/m³, RCR 0.101

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Worker - inhalation, long-term - local and systemic:

Exposure 6.26 mg/m³, DNEL 83 mg/m³, RCR 0.0754

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

PROC13 Treatment of articles by dipping and pouring.

PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.

Worker - inhalation, long-term - local and systemic:

Exposure 20.87 mg/m³, DNEL 83 mg/m³, RCR 0.251

PROC7 Spraying in industrial settings and applications.

Worker - inhalation, long-term - local and systemic:

Exposure 52.17 mg/m³, DNEL 83 mg/m³, RCR 0.629

PROC10 Roller application or brushing of adhesive and other coating.

Worker - inhalation, long-term - local and systemic:

Exposure 0.251 mg/m³, DNEL 83 mg/m³, RCR 0.003

PROC2 Use in closed, continuous process with occasional controlled exposure.

Film formation - force drying (50 - 100°C), stoving (> 100°C), UV/EB radiation curing

Worker - inhalation, long-term - local and systemic:

Exposure 4.173 mg/m³, DNEL 83 mg/m³, RCR 0.0503

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Assessment method

Used ECETOC TRA model.

Uses in Coatings - Industrial

Exposure

PROC1 Use in closed process, no likelihood of exposure.

Worker - dermal, long-term - systemic:

Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116

PROC2 Use in closed, continuous process with occasional controlled exposure.

PROC15 Use as laboratory reagent.

PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.

Worker - dermal, long-term - systemic:

Exposure 0.343 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0291

PROC2 Use in closed, continuous process with occasional controlled exposure.

Film formation - force drying (50 - 100°C), stoving (> 100°C), UV/EB radiation curing

PROC13 Treatment of articles by dipping and pouring.

Worker - dermal, long-term - systemic:

Exposure 0.137 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0116

PROC3 Use in closed batch process (synthesis or formulation).

Worker - dermal, long-term - systemic:

Exposure 0.034 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.00288

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

Worker - dermal, long-term - systemic:

Exposure 0.686 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0581

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).

Worker - dermal, long-term - systemic:

Exposure 0.014 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.00119

PROC7 Spraying in industrial settings and applications.

Spraying (automatic/robotic)

Worker - dermal, long-term - systemic:

Exposure 0.214 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0181

PROC7 Spraying in industrial settings and applications.

Manual spraying

Worker - dermal, long-term - systemic:

Exposure 0.857 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0726

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Worker - dermal, long-term - systemic:

Exposure 0.027 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.00229

PROC10 Roller application or brushing of adhesive and other coating.

Worker - dermal, long-term - systemic:

Exposure 0.274 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0232

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario Uses in Coatings - Professional

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Uses in Coatings - Professional
Product category	PC9a Coatings and paints, thinners, paint removers.
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC4 Industrial use of processing aids in processes and products, not becoming part of articles.
<u>Worker</u>	
Process category	<p>PROC1 Use in closed process, no likelihood of exposure.</p> <p>PROC2 Use in closed, continuous process with occasional controlled exposure.</p> <p>PROC3 Use in closed batch process (synthesis or formulation).</p> <p>PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.</p> <p>PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).</p> <p>PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.</p> <p>PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.</p> <p>PROC10 Roller application or brushing of adhesive and other coating.</p> <p>PROC11 Spraying outside industrial settings and/or applications.</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC15 Use as laboratory reagent.</p> <p>PROC19 Hand-mixing with intimate contact and only PPE available.</p>

Uses in Coatings - Professional

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %. Unless otherwise stated.

Environmental factors not influenced by risk management measures

Dilution Móttöku-yfirborðsvatnsflæði: 18400 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts PROC1 Use in closed process, no likelihood of exposure. PROC3 Use in closed batch process (synthesis or formulation). PROC15 Use as laboratory reagent. Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Use in closed, continuous process with occasional controlled exposure. PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC10 Roller application or brushing of adhesive and other coating. Both hands. Covers skin contact area up to 960 cm². PROC11 Spraying outside industrial settings and/or applications. Hands and forearms. Covers skin contact area up to 1500 cm². PROC19 Hand-mixing with intimate contact and only PPE available. Hands and forearms. Covers skin contact area up to 1980 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Uses in Coatings - Professional

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 80% , or: Ensure operation is undertaken outdoors.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. Film formation - air drying PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Material transfers PROC19 Hand-mixing with intimate contact and only PPE available. Avoid carrying out operation for more than 1 hour.

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.
 PROC10 Roller application or brushing of adhesive and other coating.
 Wear a full-face respirator conforming to EN136 with Type A/P2 filter or better.
 , or:
 Avoid carrying out operation for more than 1 hour.
 PROC11 Spraying outside industrial settings and/or applications.
 Wear a respirator conforming to EN140 with Type A/P2 filter or better.
 , or:
 Limit the substance content in the product to 25%.
 Avoid carrying out operation for more than 15 minutes.
 PROC13 Treatment of articles by dipping and pouring.
 Wear a respirator conforming to EN140 with Type A/P2 filter or better.
 , or:
 Avoid carrying out operation for more than 4 hours.

 Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method	Used EUSES model.
Environmental release	Water: 0.022 kg/day Air: 0 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.00078 mg/l, PNEC 0.6 mg/l, RCR 0.001 Freshwater sediment: Exposure 0.011 mg/kg, PNEC 8.27 mg/kg, RCR 0.001 Marine water: Exposure 0.0000697 mg/l, PNEC 0.06 mg/l, RCR 0.001 Marine sediment: Exposure 0.000961 mg/kg, PNEC 0.827 mg/kg, RCR 0.001 Frárennsli: Exposure 0.001 mg/l, PNEC 27.5 mg/l, RCR 0 Ræktunarfjarðvegur: Exposure 0.000315 mg/kg, PNEC 1.3 mg/kg, RCR 0

Uses in Coatings - Professional

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method Used ECETOC TRA model.

Uses in Coatings - Professional

Exposure

PROC1 Use in closed process, no likelihood of exposure.

Worker - inhalation, long-term - local and systemic:

Exposure 0.042 mg/m³, DNEL 83 mg/m³, RCR 0.0005

PROC2 Use in closed, continuous process with occasional controlled exposure.

Worker - inhalation, long-term - local and systemic:

Exposure 16.69 mg/m³, DNEL 83 mg/m³, RCR 0.201

PROC3 Use in closed batch process (synthesis or formulation).

Worker - inhalation, long-term - local and systemic:

Exposure 73.03 mg/m³, DNEL 83 mg/m³, RCR 0.880

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. Indoor.

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).

Outdoor.

PROC11 Spraying outside industrial settings and/or applications.

Outdoor.

PROC13 Treatment of articles by dipping and pouring.

Outdoor.

Worker - inhalation, long-term - local and systemic:

Exposure 29.21 mg/m³, DNEL 83 mg/m³, RCR 0.352

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Outdoor.

PROC15 Use as laboratory reagent.

Worker - inhalation, long-term - local and systemic:

Exposure 41.73 mg/m³, DNEL 83 mg/m³, RCR 0.503

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).

Indoor.

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Worker - inhalation, long-term - local and systemic:

Exposure 20.87 mg/m³, DNEL 83 mg/m³, RCR 0.251

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

PROC10 Roller application or brushing of adhesive and other coating.

PROC19 Hand-mixing with intimate contact and only PPE available.

Outdoor.

Worker - inhalation, long-term - local and systemic:

Exposure 58.43 mg/m³, DNEL 83 mg/m³, RCR 0.704

PROC11 Spraying outside industrial settings and/or applications.

Indoor.

Worker - inhalation, long-term - local and systemic:

Exposure 25.04 mg/m³, DNEL 83 mg/m³, RCR 0.302

PROC13 Treatment of articles by dipping and pouring.

Indoor.

Worker - inhalation, long-term - local and systemic:

Exposure 50.08 mg/m³, DNEL 83 mg/m³, RCR 0.603

PROC19 Hand-mixing with intimate contact and only PPE available.

Indoor.

Worker - inhalation, long-term - local and systemic:

Exposure 16.69 mg/m³, DNEL 83 mg/m³, RCR 0.201

4. Guidance to check compliance with the exposure scenario (Health 1)

Uses in Coatings - Professional

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Assessment method	Used ECETOC TRA model.
Exposure	<p>PROC1 Use in closed process, no likelihood of exposure.</p> <p>PROC15 Use as laboratory reagent.</p> <p>Worker - dermal, long-term - systemic: Exposure 0.343 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0291</p> <p>PROC2 Use in closed, continuous process with occasional controlled exposure.</p> <p>PROC13 Treatment of articles by dipping and pouring. Indoor.</p> <p>Worker - dermal, long-term - systemic: Exposure 0.137 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0116</p> <p>PROC3 Use in closed batch process (synthesis or formulation). Worker - dermal, long-term - systemic: Exposure 0.029 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.00246</p> <p>PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.</p> <p>PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. Worker - dermal, long-term - systemic: Exposure 0.686 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0581</p> <p>PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). Worker - dermal, long-term - systemic: Exposure 2.743 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.232</p> <p>PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.</p> <p>PROC10 Roller application or brushing of adhesive and other coating.</p> <p>PROC13 Treatment of articles by dipping and pouring. Outdoor.</p> <p>Worker - dermal, long-term - systemic: Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116</p> <p>PROC11 Spraying outside industrial settings and/or applications. Indoor.</p> <p>Worker - dermal, long-term - systemic: Exposure 0.214 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0181</p> <p>PROC11 Spraying outside industrial settings and/or applications. Outdoor.</p> <p>Worker - dermal, long-term - systemic: Exposure 5.357 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.454</p> <p>PROC19 Hand-mixing with intimate contact and only PPE available. Indoor.</p> <p>Worker - dermal, long-term - systemic: Exposure 0.283 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0240</p> <p>PROC19 Hand-mixing with intimate contact and only PPE available. Outdoor.</p> <p>Worker - dermal, long-term - systemic: Exposure 2.829 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.240</p>

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

Uses in Coatings - Professional



Exposure scenario Uses in Cleaning Agents - Industrial

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Uses in Cleaning Agents - Industrial
Product category	PC35 Washing and cleaning products (including solvent-based products).
Main sector	SU3 Industrial uses
<u>Environment</u>	
Environmental release category	ERC4 Industrial use of processing aids in processes and products, not becoming part of articles.
<u>Worker</u>	
Process category	PROC2 Use in closed, continuous process with occasional controlled exposure. PROC3 Use in closed batch process (synthesis or formulation). PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC7 Spraying in industrial settings and applications. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC10 Roller application or brushing of adhesive and other coating. PROC13 Treatment of articles by dipping and pouring.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %. Unless otherwise stated.

Amounts used

Uses in Cleaning Agents - Industrial

Daily amount per site: 10.5 tonnes
Annual amount per site: 1050 tonnes

Environmental factors not influenced by risk management measures

Dilution Móttöku-yfirborðsvatnsflæði: 18400 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts PROC3 Use in closed batch process (synthesis or formulation). Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Use in closed, continuous process with occasional controlled exposure. PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC10 Roller application or brushing of adhesive and other coating. Both hands. Covers skin contact area up to 960 cm². PROC7 Spraying in industrial settings and applications. Hands and forearms. Covers skin contact area up to 1500 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Uses in Cleaning Agents - Industrial

Organisational measures PROC10 Roller application or brushing of adhesive and other coating. Cleaning with low-pressure washers Avoid carrying out activities involving exposure for more than 1 hour.
PROC3 Use in closed batch process (synthesis or formulation). PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. Avoid carrying out operation for more than 4 hours.

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.
PROC7 Spraying in industrial settings and applications.
Wear a full-face respirator conforming to EN136 with Type A/P2 filter or better.
Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method Used EUSES model.

Environmental release Water: 1.05 kg/day
Air: 3150 kg/day
Soil: 0 kg/day

Environmental exposure Fresh water:
Exposure 0.006 mg/l, PNEC 0.6 mg/l, RCR 0.011
Freshwater sediment:
Exposure 0.088 mg/kg, PNEC 8.27 mg/kg, RCR 0.011
Marine water:
Exposure 0.000637 mg/l, PNEC 0.06 mg/l, RCR 0.011
Marine sediment:
Exposure 0.009 mg/kg, PNEC 0.827 mg/kg, RCR 0.011
Frárennsli:
Exposure 0.061 mg/l, PNEC 27.5 mg/l, RCR 0.002
Ræktunarjarðvegur:
Exposure 0.0507 mg/kg, PNEC 1.3 mg/kg, RCR 0.039

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method Used ECETOC TRA model.

Uses in Cleaning Agents - Industrial

Exposure

PROC3 Use in closed batch process (synthesis or formulation).

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

PROC10 Roller application or brushing of adhesive and other coating.

Cleaning with low-pressure washers

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic:

Exposure 20.87 mg/m³, DNEL 83 mg/m³, RCR 0.251

PROC2 Use in closed, continuous process with occasional controlled exposure.

PROC10 Roller application or brushing of adhesive and other coating.

Manual

Worker - inhalation, long-term - local and systemic:

Exposure 41.73 mg/m³, DNEL 83 mg/m³, RCR 0.503

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Worker - inhalation, long-term - local and systemic:

Exposure 6.26 mg/m³, DNEL 83 mg/m³, RCR 0.0754

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Worker - inhalation, long-term - local and systemic:

Exposure 5.008 mg/m³, DNEL 83 mg/m³, RCR 0.0604

PROC7 Spraying in industrial settings and applications.

Worker - inhalation, long-term - local and systemic:

Exposure 52.17 mg/m³, DNEL 83 mg/m³, RCR 0.629

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Assessment method

Used ECETOC TRA model.

Uses in Cleaning Agents - Industrial

Exposure

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Worker - dermal, long-term - systemic:

Exposure 0.027 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.00229

PROC2 Use in closed, continuous process with occasional controlled exposure.

Worker - dermal, long-term - systemic:

Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116

PROC3 Use in closed batch process (synthesis or formulation).

Worker - dermal, long-term - systemic:

Exposure 0.343 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0291

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Worker - dermal, long-term - systemic:

Exposure 0.686 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0581

PROC13 Treatment of articles by dipping and pouring.

Worker - dermal, long-term - systemic:

Exposure 0.137 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0116

PROC10 Roller application or brushing of adhesive and other coating.

Cleaning

Worker - dermal, long-term - systemic:

Exposure 2.743 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.232

PROC7 Spraying in industrial settings and applications.

Worker - dermal, long-term - systemic:

Exposure 0.857 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0726

PROC10 Roller application or brushing of adhesive and other coating.

Manual

Worker - dermal, long-term - systemic:

Exposure 0.274 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0232

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario Uses in Cleaning Agents - Professional

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Uses in Cleaning Agents - Professional
Product category	PC35 Washing and cleaning products (including solvent-based products).
Main sector	SU3 Industrial uses
<u>Environment</u>	
Environmental release category	ERC8a Wide dispersive indoor use of processing aids in open systems.
<u>Worker</u>	
Process category	PROC2 Use in closed, continuous process with occasional controlled exposure. PROC3 Use in closed batch process (synthesis or formulation). PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC10 Roller application or brushing of adhesive and other coating. PROC11 Spraying outside industrial settings and/or applications. PROC13 Treatment of articles by dipping and pouring.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details	Nær yfir styrkleika allt að 100 %. Unless otherwise stated.
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Environmental factors not influenced by risk management measures

Uses in Cleaning Agents - Professional

Dilution Móttöku-yfirborðsvatnsflæði: 18400 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %. Unless otherwise stated. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC10 Roller application or brushing of adhesive and other coating. Limit the substance content in the product to 25%. PROC11 Spraying outside industrial settings and/or applications. Limit the substance content in the product to 1%. Cleaning with low-pressure washers Limit the substance content in the product to 5%.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts PROC3 Use in closed batch process (synthesis or formulation). Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Use in closed, continuous process with occasional controlled exposure. PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC10 Roller application or brushing of adhesive and other coating. Both hands. Covers skin contact area up to 960 cm². PROC11 Spraying outside industrial settings and/or applications. Hands and forearms. Covers skin contact area up to 1500 cm².

Other given operational conditions affecting workers exposure

Temperature Assumes activities are at ambient temperature (unless stated differently).

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 80% , or: Ensure operation is undertaken outdoors.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Avoid carrying out operation for more than 4 hours. PROC13 Treatment of articles by dipping and pouring. Avoid carrying out operation for more than 1 hour.

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.
 PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
 Wear a full-face respirator conforming to EN136 with Type A/P2 filter or better.
 PROC10 Roller application or brushing of adhesive and other coating.
 Without local exhaust ventilation
 Wear a respirator conforming to EN140 with Type A/P2 filter or better.

Uses in Cleaning Agents - Professional

Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method	Used EUSES model.
Environmental release	Water: 0 kg/day Air: 0 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.000652 mg/l, PNEC 0.6 mg/l, RCR 0.001 Freshwater sediment: Exposure 0.009 mg/kg, PNEC 8.27 mg/kg, RCR 0.001 Marine water: Exposure 0.0000569 mg/l, PNEC 0.06 mg/l, RCR 0.001 Marine sediment: Exposure 0.000784 mg/kg, PNEC 0.827 mg/kg, RCR 0.001 Frárennsli: Exposure 0.00000000802 mg/l, PNEC 27.5 mg/l, RCR 0 Ræktunarjarðvegur: Exposure 0.0000315 mg/kg, PNEC 1.3 mg/kg, RCR 0

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
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Uses in Cleaning Agents - Professional

Exposure

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Worker - inhalation, long-term - local and systemic:

Exposure 12.52 mg/m³, DNEL 83 mg/m³, RCR 0.151

PROC2 Use in closed, continuous process with occasional controlled exposure.

PROC10 Roller application or brushing of adhesive and other coating.

Worker - inhalation, long-term - local and systemic:

Exposure 50.08 mg/m³, DNEL 83 mg/m³, RCR 0.603

PROC3 Use in closed batch process (synthesis or formulation).

Worker - inhalation, long-term - local and systemic:

Exposure 62.6 mg/m³, DNEL 83 mg/m³, RCR 0.754

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Worker - inhalation, long-term - local and systemic:

Exposure 41.73 mg/m³, DNEL 83 mg/m³, RCR 0.503

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

PROC11 Spraying outside industrial settings and/or applications.

Worker - inhalation, long-term - local and systemic:

Exposure 29.21 mg/m³, DNEL 83 mg/m³, RCR 0.352

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic:

Exposure 58.43 mg/m³, DNEL 83 mg/m³, RCR 0.704

PROC10 Roller application or brushing of adhesive and other coating.

Worker - inhalation, long-term - local and systemic:

Exposure 16.69 mg/m³, DNEL 83 mg/m³, RCR 0.201

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

PROC10 Roller application or brushing of adhesive and other coating.

PROC11 Spraying outside industrial settings and/or applications.

Worker - inhalation, long-term - local and systemic:

Exposure 25.04 mg/m³, DNEL 83 mg/m³, RCR 0.302

PROC10 Roller application or brushing of adhesive and other coating.

Worker - inhalation, long-term - local and systemic:

Exposure 30.05 mg/m³, DNEL 83 mg/m³, RCR 0.362

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Assessment method

Used ECETOC TRA model.

Uses in Cleaning Agents - Professional

Exposure

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

PROC10 Roller application or brushing of adhesive and other coating.

Manual

Worker - dermal, long-term - systemic:

Exposure 0.137 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0116

PROC2 Use in closed, continuous process with occasional controlled exposure.

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Semi-automated process (e.g. semi-automatic application of floor care and maintenance products)

Application of cleaning products in closed systems

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

PROC13 Treatment of articles by dipping and pouring.

Worker - dermal, long-term - systemic:

Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116

PROC3 Use in closed batch process (synthesis or formulation).

Worker - dermal, long-term - systemic:

Exposure 0.343 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0291

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Worker - dermal, long-term - systemic:

Exposure 0.034 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.00288

PROC10 Roller application or brushing of adhesive and other coating.

Ad hoc manual application via trigger sprays, dipping, etc.

With local exhaust ventilation

PROC10 Roller application or brushing of adhesive and other coating.

Cleaning with low-pressure washers

Worker - dermal, long-term - systemic:

Exposure 0.274 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0232

PROC11 Spraying outside industrial settings and/or applications.

Indoor use.

Worker - dermal, long-term - systemic:

Exposure 0.043 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.00364

PROC11 Spraying outside industrial settings and/or applications.

Outdoor use.

Worker - dermal, long-term - systemic:

Exposure 5.357 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.454

PROC10 Roller application or brushing of adhesive and other coating.

Ad hoc manual application via trigger sprays, dipping, etc.

Without local exhaust ventilation

Worker - dermal, long-term - systemic:

Exposure 2.743 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.232

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Cleaning of medical devices

Worker - dermal, long-term - systemic:

Exposure 0.686 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0581

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario Use in Lubricants - Industrial

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Use in Lubricants - Industrial
Product category	PC24 Lubricants, greases and release products.
Main sector	SU3 Industrial uses
<u>Environment</u>	
Environmental release category	ERC4 Industrial use of processing aids in processes and products, not becoming part of articles.
<u>Worker</u>	
Process category	<p>PROC1 Use in closed process, no likelihood of exposure.</p> <p>PROC2 Use in closed, continuous process with occasional controlled exposure.</p> <p>PROC3 Use in closed batch process (synthesis or formulation).</p> <p>PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.</p> <p>PROC7 Spraying in industrial settings and applications.</p> <p>PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.</p> <p>PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.</p> <p>PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).</p> <p>PROC10 Roller application or brushing of adhesive and other coating.</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC17 Lubrication at high energy conditions and in partly open process.</p> <p>PROC18 Greasing at high energy conditions.</p>

Use in Lubricants - Industrial

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %. Unless otherwise stated.

Amounts used

Daily amount per site: 8.75 tonnes

Annual amount per site: 175 tonnes

Environmental factors not influenced by risk management measures

Dilution Móttöku-yfirborðsvatnsflæði: 18400 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts PROC1 Use in closed process, no likelihood of exposure. PROC3 Use in closed batch process (synthesis or formulation). Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Use in closed, continuous process with occasional controlled exposure. PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC10 Roller application or brushing of adhesive and other coating. PROC17 Lubrication at high energy conditions and in partly open process. PROC18 Greasing at high energy conditions. Both hands. Covers skin contact area up to 960 cm². PROC7 Spraying in industrial settings and applications. Hands and forearms. Covers skin contact area up to 1500 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Use in Lubricants - Industrial

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 90%

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.
 PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).
 Remanufacture of reject articles
 PROC10 Roller application or brushing of adhesive and other coating.
 PROC13 Treatment of articles by dipping and pouring.
 Wear a full-face respirator conforming to EN136 with Type A/P2 filter or better.
 Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method	Used EUSES model.
Environmental release	Water: 8.75 kg/day Air: 13.125 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.051 mg/l, PNEC 0.6 mg/l, RCR 0.086 Freshwater sediment: Exposure 0.707 mg/kg, PNEC 8.27 mg/kg, RCR 0.085 Marine water: Exposure 0.005 mg/l, PNEC 0.06 mg/l, RCR 0.086 Marine sediment: Exposure 0.071 mg/kg, PNEC 0.827 mg/kg, RCR 0.085 Frárennsli: Exposure 0.511 mg/l, PNEC 27.5 mg/l, RCR 0.019 Ræktunarjarðvegur: Exposure 0.113 mg/kg, PNEC 1.3 mg/kg, RCR 0.087

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
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Use in Lubricants - Industrial

Exposure

PROC1 Use in closed process, no likelihood of exposure.

Worker - inhalation, long-term - local and systemic:

Exposure 0.042 mg/m³, DNEL 83 mg/m³, RCR 0.000506

PROC3 Use in closed batch process (synthesis or formulation).

PROC17 Lubrication at high energy conditions and in partly open process.

PROC18 Greasing at high energy conditions.

Worker - inhalation, long-term - local and systemic:

Exposure 10.43 mg/m³, DNEL 83 mg/m³, RCR 0.126

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Worker - inhalation, long-term - local and systemic:

Exposure 8.347 mg/m³, DNEL 83 mg/m³, RCR 0.101

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Worker - inhalation, long-term - local and systemic:

Exposure 6.26 mg/m³, DNEL 83 mg/m³, RCR 0.075

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

PROC10 Roller application or brushing of adhesive and other coating.

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic:

Exposure 20.87 mg/m³, DNEL 83 mg/m³, RCR 0.251

PROC7 Spraying in industrial settings and applications.

Worker - inhalation, long-term - local and systemic:

Exposure 52.17 mg/m³, DNEL 83 mg/m³, RCR 0.629

PROC2 Use in closed, continuous process with occasional controlled exposure.

Worker - inhalation, long-term - local and systemic:

Exposure 41.73 mg/m³, DNEL 83 mg/m³, RCR 0.503

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Assessment method

Used ECETOC TRA model.

Use in Lubricants - Industrial

Exposure

PROC1 Use in closed process, no likelihood of exposure.

Worker - dermal, long-term - systemic:

Exposure 0.343 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0291

PROC3 Use in closed batch process (synthesis or formulation).

Worker - dermal, long-term - systemic:

Exposure 0.003 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.000254

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Bulk transfers

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

PROC18 Greasing at high energy conditions.

Worker - dermal, long-term - systemic:

Exposure 0.137 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0116

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Worker - inhalation, long-term - systemic:

Exposure 0.027 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.002

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Filling/preparation of equipment from drums or containers.

Maintenance (of larger plant items) and machine set up

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

Initial factory fill of equipment

Worker - dermal, long-term - systemic:

Exposure 0.686 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0581

PROC17 Lubrication at high energy conditions and in partly open process.

Worker - dermal, long-term - systemic:

Exposure 0.274 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.023

PROC10 Roller application or brushing of adhesive and other coating.

Worker - dermal, long-term - systemic:

Exposure 5.486 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.465

PROC13 Treatment of articles by dipping and pouring.

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

Remanufacture of reject articles

PROC2 Use in closed, continuous process with occasional controlled exposure.

Worker - dermal, long-term - systemic:

Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116

PROC7 Spraying in industrial settings and applications.

Worker - dermal, long-term - systemic:

Exposure 2.143 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.182

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario Use in Lubricants - Professional

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Use in Lubricants - Professional
Product category	PC24 Lubricants, greases and release products.
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC8a Wide dispersive indoor use of processing aids in open systems.
<u>Worker</u>	
Process category	<p>PROC2 Use in closed, continuous process with occasional controlled exposure.</p> <p>PROC3 Use in closed batch process (synthesis or formulation).</p> <p>PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.</p> <p>PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.</p> <p>PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.</p> <p>PROC10 Roller application or brushing of adhesive and other coating.</p> <p>PROC17 Lubrication at high energy conditions and in partly open process.</p> <p>PROC18 Greasing at high energy conditions.</p> <p>PROC20 Heat and pressure transfer fluids in dispersive use but closed systems.</p> <p>PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).</p> <p>PROC10 Roller application or brushing of adhesive and other coating.</p> <p>PROC11 Spraying outside industrial settings and/or applications.</p> <p>PROC13 Treatment of articles by dipping and pouring.</p>

Use in Lubricants - Professional

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %. Unless otherwise stated.

Environmental factors not influenced by risk management measures

Dilution Móttöku-yfirborðsvatnsflæði: 18400 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %. Unless otherwise stated. PROC17 Lubrication at high energy conditions and in partly open process. Outdoor use. Avoid using at a product concentration greater than 5%. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Avoid using at a product concentration greater than 25%.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts PROC2 Use in closed, continuous process with occasional controlled exposure. PROC3 Use in closed batch process (synthesis or formulation). PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC20 Heat and pressure transfer fluids in dispersive use but closed systems. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC10 Roller application or brushing of adhesive and other coating. PROC17 Lubrication at high energy conditions and in partly open process. PROC18 Greasing at high energy conditions. Both hands. Covers skin contact area up to 960 cm². PROC11 Spraying outside industrial settings and/or applications. Hands and forearms. Covers skin contact area up to 1500 cm².

Other given operational conditions affecting workers exposure

Setting Indoor/outdoor use.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Technical conditions and measures at process level (source) to prevent release

Use in Lubricants - Professional

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. Bulk transfers Maintenance and machine set up PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC17 Lubrication at high energy conditions and in partly open process. Indoor. PROC18 Greasing at high energy conditions. Avoid carrying out activities involving exposure for more than 4 hours. Outdoor. PROC17 Lubrication at high energy conditions and in partly open process. PROC10 Roller application or brushing of adhesive and other coating. PROC11 Spraying outside industrial settings and/or applications. Avoid carrying out operation for more than 1 hour.

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.
 PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).
 PROC11 Spraying outside industrial settings and/or applications.
 PROC13 Treatment of articles by dipping and pouring.
 Wear a full-face respirator conforming to EN136 with Type A/P2 filter or better.
 PROC10 Roller application or brushing of adhesive and other coating.
 Wear a respirator conforming to EN140 with Type A/P2 filter or better.
 , or:
 Avoid carrying out activities involving exposure for more than 1 hour.
 Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method	Used EUSES model.
Environmental release	Water: 0.004 kg/day Air: 0 kg/day Soil: 0 kg/day

Use in Lubricants - Professional

Environmental exposure

Fresh water:

Exposure 0.000676 mg/l, PNEC 0.6 mg/l, RCR 0.001

Freshwater sediment:

Exposure 0.009 mg/kg, PNEC 8.27 mg/kg, RCR 0.001

Marine water:

Exposure 0.0000593 mg/l, PNEC 0.06 mg/l, RCR 0.001

Marine sediment:

Exposure 0.000817 mg/kg, PNEC 0.827 mg/kg, RCR 0.001

Frárennsli:

Exposure 0.000241 mg/l, PNEC 27.5 mg/l, RCR 0

Ræktunarjarðvegur:

Exposure 0.0000847 mg/kg, PNEC 1.3 mg/kg, RCR 0

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method

Used ECETOC TRA model.

Use in Lubricants - Professional

Exposure

PROC2 Use in closed, continuous process with occasional controlled exposure.
 PROC20 Heat and pressure transfer fluids in dispersive use but closed systems.
 Worker - inhalation, long-term - local and systemic:
 Exposure 58.43 mg/m³, DNEL 83 mg/m³, RCR 0.704
 PROC3 Use in closed batch process (synthesis or formulation).
 Worker - inhalation, long-term - local and systemic:
 Exposure 73.03 mg/m³, DNEL 83 mg/m³, RCR 0.88
 PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.
 PROC10 Roller application or brushing of adhesive and other coating.
 PROC13 Treatment of articles by dipping and pouring.
 Without local exhaust ventilation
 Worker - inhalation, long-term - local and systemic:
 Exposure 41.73 mg/m³, DNEL 83 mg/m³, RCR 0.503
 PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
 Bulk transfers
 Worker - inhalation, long-term - local and systemic:
 Exposure 12.52 mg/m³, DNEL 83 mg/m³, RCR 0.151
 PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
 Filling/preparation of equipment from drums or containers.
 Maintenance and machine set up
 Worker - inhalation, long-term - local and systemic:
 Exposure 20.87 mg/m³, DNEL 83 mg/m³, RCR 0.251
 PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
 Filling/preparation of equipment from drums or containers.
 PROC17 Lubrication at high energy conditions and in partly open process.
 Indoor use.
 PROC18 Greasing at high energy conditions.
 Worker - inhalation, long-term - local and systemic:
 Exposure 50.08 mg/m³, DNEL 83 mg/m³, RCR 0.603
 PROC17 Lubrication at high energy conditions and in partly open process.
 Outdoor use.
 Worker - inhalation, long-term - local and systemic:
 Exposure 23.37 mg/m³, DNEL 83 mg/m³, RCR 0.282
 PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
 Maintenance of small items
 Worker - inhalation, long-term - local and systemic:
 Exposure 15.02 mg/m³, DNEL 83 mg/m³, RCR 0.181
 PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).
 Worker - inhalation, long-term - local and systemic:
 Exposure 25.04 mg/m³, DNEL 83 mg/m³, RCR 0.302
 PROC10 Roller application or brushing of adhesive and other coating.
 With local exhaust ventilation
 Worker - inhalation, long-term - local and systemic:
 Exposure 16.69 mg/m³, DNEL 83 mg/m³, RCR 0.201
 PROC11 Spraying outside industrial settings and/or applications.
 Indoor use.
 PROC13 Treatment of articles by dipping and pouring.
 With local exhaust ventilation
 Worker - inhalation, long-term - local and systemic:
 Exposure 8.347 mg/m³, DNEL 83 mg/m³, RCR 0.101

Use in Lubricants - Professional

PROC11 Spraying outside industrial settings and/or applications.
Outdoor use.
Worker - inhalation, long-term - local and systemic:
Exposure 29.21 mg/m³, DNEL 83 mg/m³, RCR 0.352

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Assessment method Used ECETOC TRA model.

Use in Lubricants - Professional

Exposure

PROC2 Use in closed, continuous process with occasional controlled exposure.

PROC17 Lubrication at high energy conditions and in partly open process.

Indoor use.

Worker - dermal, long-term - systemic:

Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116

PROC3 Use in closed batch process (synthesis or formulation).

Worker - dermal, long-term - systemic:

Exposure 0.343 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0291

PROC20 Heat and pressure transfer fluids in dispersive use but closed systems.

Worker - dermal, long-term - systemic:

Exposure 1.714 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.145

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

PROC13 Treatment of articles by dipping and pouring.

With local exhaust ventilation

PROC18 Greasing at high energy conditions.

Worker - dermal, long-term - systemic:

Exposure 0.686 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0581

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Filling/preparation of equipment from drums or containers.

Worker - dermal, long-term - systemic:

Exposure 0.137 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0116

PROC17 Lubrication at high energy conditions and in partly open process.

Outdoor use.

Worker - dermal, long-term - systemic:

Exposure 27.43 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 2.324

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Maintenance of small items

PROC10 Roller application or brushing of adhesive and other coating.

Without local exhaust ventilation

PROC13 Treatment of articles by dipping and pouring.

Without local exhaust ventilation

Worker - dermal, long-term - systemic:

Exposure 2.743 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.232

PROC11 Spraying outside industrial settings and/or applications.

Indoor use.

Worker - dermal, long-term - systemic:

Exposure 2.143 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.182

PROC11 Spraying outside industrial settings and/or applications.

Outdoor use.

Worker - dermal, long-term - systemic:

Exposure 5.357 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.454

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

Worker - dermal, long-term - systemic:

Exposure 6.857 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.581

PROC2 Use in closed, continuous process with occasional controlled exposure.

Storage

PROC10 Roller application or brushing of adhesive and other coating.

With local exhaust ventilation

Worker - dermal, long-term - systemic:

Exposure 0.274 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.023

Use in Lubricants - Professional

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario

Use in metal working fluids and rolling oils - Industrial

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Use in metal working fluids and rolling oils - Industrial
Product category	PC25 Metal working fluids.
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC4 Industrial use of processing aids in processes and products, not becoming part of articles.
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Worker

Process category	<p>PROC1 Use in closed process, no likelihood of exposure.</p> <p>PROC2 Use in closed, continuous process with occasional controlled exposure.</p> <p>PROC3 Use in closed batch process (synthesis or formulation).</p> <p>PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.</p> <p>PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).</p> <p>PROC7 Spraying in industrial settings and applications.</p> <p>PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.</p> <p>PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.</p> <p>PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).</p> <p>PROC10 Roller application or brushing of adhesive and other coating.</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC17 Lubrication at high energy conditions and in partly open process.</p>
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Use in metal working fluids and rolling oils - Industrial

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %. Unless otherwise stated.

Amounts used

Daily amount per site: 5 tonnes
Annual amount per site: 100 tonnes

Environmental factors not influenced by risk management measures

Dilution Móttöku-yfirborðsvatnsflæði: 18400 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts PROC1 Use in closed process, no likelihood of exposure. PROC3 Use in closed batch process (synthesis or formulation). Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Use in closed, continuous process with occasional controlled exposure. PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC10 Roller application or brushing of adhesive and other coating. PROC17 Lubrication at high energy conditions and in partly open process. Both hands. Covers skin contact area up to 960 cm². PROC7 Spraying in industrial settings and applications. Hands and forearms. Covers skin contact area up to 1500 cm².

Other given operational conditions affecting workers exposure

Setting Indoor. Unless otherwise stated.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Use in metal working fluids and rolling oils - Industrial

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. Process sampling Avoid carrying out operation for more than 1 hour.

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.

Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method	Used EUSES model.
Environmental release	Water: 5 kg/day Air: 30 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.029 mg/l, PNEC 0.6 mg/l, RCR 0.049 Freshwater sediment: Exposure 0.406 mg/kg, PNEC 8.27 mg/kg, RCR 0.049 Marine water: Exposure 0.003 mg/l, PNEC 0.06 mg/l, RCR 0.049 Marine sediment: Exposure 0.04 mg/kg, PNEC 0.827 mg/kg, RCR 0.049 Frárennsli: Exposure 0.292 mg/l, PNEC 27.5 mg/l, RCR 0.011 Ræktunarjarðvegur: Exposure 0.065 mg/kg, PNEC 1.3 mg/kg, RCR 0.05

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method Used ECETOC TRA model.

Use in metal working fluids and rolling oils - Industrial

Exposure

PROC1 Use in closed process, no likelihood of exposure.

Worker - inhalation, long-term - local and systemic:

Exposure 0.042 mg/m³, DNEL 83 mg/m³, RCR 0.000506

PROC3 Use in closed batch process (synthesis or formulation).

PROC17 Lubrication at high energy conditions and in partly open process.

Worker - inhalation, long-term - local and systemic:

Exposure 10.43 mg/m³, DNEL 83 mg/m³, RCR 0.126

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Worker - inhalation, long-term - local and systemic:

Exposure 8.347 mg/m³, DNEL 83 mg/m³, RCR 0.101

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Equipment cleaning and maintenance

Filling/preparation of equipment from drums or containers.

Worker - inhalation, long-term - local and systemic:

Exposure 6.26 mg/m³, DNEL 83 mg/m³, RCR 0.075

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

PROC10 Roller application or brushing of adhesive and other coating.

Indoor.

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic:

Exposure 20.87 mg/m³, DNEL 83 mg/m³, RCR 0.251

PROC7 Spraying in industrial settings and applications.

Worker - inhalation, long-term - local and systemic:

Exposure 52.17 mg/m³, DNEL 83 mg/m³, RCR 0.629

PROC2 Use in closed, continuous process with occasional controlled exposure.

General exposures (closed systems)

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Process sampling

PROC2 Use in closed, continuous process with occasional controlled exposure.

Product storage

Worker - inhalation, long-term - local and systemic:

Exposure 41.73 mg/m³, DNEL 83 mg/m³, RCR 0.503

PROC10 Roller application or brushing of adhesive and other coating.

Outdoor.

Worker - inhalation, long-term - local and systemic:

Exposure 14.61 mg/m³, DNEL 83 mg/m³, RCR 0.176

PROC2 Use in closed, continuous process with occasional controlled exposure.

Automated metal rolling/forming

Worker - inhalation, long-term - local and systemic:

Exposure 4.173 mg/m³, DNEL 83 mg/m³, RCR 0.05

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Assessment method

Used ECETOC TRA model.

Use in metal working fluids and rolling oils - Industrial

Exposure

PROC1 Use in closed process, no likelihood of exposure.

Worker - dermal, long-term - systemic:

Exposure 0.343 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0291

PROC3 Use in closed batch process (synthesis or formulation).

Worker - dermal, long-term - systemic:

Exposure 0.034 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.003

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

General exposures (open systems)

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Bulk transfers

Equipment cleaning and maintenance

Worker - dermal, long-term - systemic:

Exposure 0.137 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0116

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Worker - inhalation, long-term - systemic:

Exposure 0.027 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.002

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Semi-automated metal rolling/forming

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Filling/preparation of equipment from drums or containers.

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

PROC13 Treatment of articles by dipping and pouring.

Worker - dermal, long-term - systemic:

Exposure 0.686 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0581

PROC17 Lubrication at high energy conditions and in partly open process.

PROC10 Roller application or brushing of adhesive and other coating.

Indoor.

Worker - dermal, long-term - systemic:

Exposure 0.247 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.023

PROC10 Roller application or brushing of adhesive and other coating.

Outdoor.

Worker - dermal, long-term - systemic:

Exposure 5.486 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.465

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

Remanufacture of reject articles

PROC2 Use in closed, continuous process with occasional controlled exposure.

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Process sampling

Worker - dermal, long-term - systemic:

Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116

PROC7 Spraying in industrial settings and applications.

Worker - dermal, long-term - systemic:

Exposure 0.214 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.018

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).

Worker - dermal, long-term - systemic:

Exposure 0.069 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.006

4. Guidance to check compliance with the exposure scenario (Health 2)

Use in metal working fluids and rolling oils - Industrial

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario

Use in metal working fluids and rolling oils - Professional

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Use in metal working fluids and rolling oils - Professional
Product category	PC25 Metal working fluids.
Main sector	SU22 Professional uses

Environment

Environmental release category	ERC8a Wide dispersive indoor use of processing aids in open systems.
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Worker

Process category	<p>PROC1 Use in closed process, no likelihood of exposure.</p> <p>PROC2 Use in closed, continuous process with occasional controlled exposure.</p> <p>PROC3 Use in closed batch process (synthesis or formulation).</p> <p>PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.</p> <p>PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.</p> <p>PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).</p> <p>PROC10 Roller application or brushing of adhesive and other coating.</p> <p>PROC11 Spraying outside industrial settings and/or applications.</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC17 Lubrication at high energy conditions and in partly open process.</p>
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Use in metal working fluids and rolling oils - Professional

Concentration details Nær yfir styrkleika allt að 100 %. Unless otherwise stated.

Environmental factors not influenced by risk management measures

Dilution Móttöku-yfirborðsvatnsflæði: 18400 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts PROC1 Use in closed process, no likelihood of exposure. PROC3 Use in closed batch process (synthesis or formulation). Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Use in closed, continuous process with occasional controlled exposure. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC10 Roller application or brushing of adhesive and other coating. PROC17 Lubrication at high energy conditions and in partly open process. Both hands. Covers skin contact area up to 960 cm². PROC11 Spraying outside industrial settings and/or applications. Hands and forearms. Covers skin contact area up to 1500 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Use in metal working fluids and rolling oils - Professional

Organisational measures PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC13 Treatment of articles by dipping and pouring. Without local exhaust ventilation Avoid carrying out activities involving exposure for more than 4 hours. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Filling/preparation of equipment from drums or containers. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. Process sampling PROC11 Spraying outside industrial settings and/or applications. Without local exhaust ventilation Avoid carrying out operation for more than 1 hour.

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.
 PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
 Equipment cleaning and maintenance
 PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
 Equipment cleaning and maintenance
 PROC10 Roller application or brushing of adhesive and other coating.
 PROC11 Spraying outside industrial settings and/or applications.
 PROC17 Lubrication at high energy conditions and in partly open process.
 Wear a respirator conforming to EN140 with Type A/P2 filter or better.
 Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method Used EUSES model.

Environmental release Water: 0.003 kg/day
 Air: 0 kg/day
 Soil: 0 kg/day

Environmental exposure Fresh water:
 Exposure 0.000668 mg/l, PNEC 0.6 mg/l, RCR 0.001
 Freshwater sediment:
 Exposure 0.009 mg/kg, PNEC 8.27 mg/kg, RCR 0.001
 Marine water:
 Exposure 0.0000585 mg/l, PNEC 0.06 mg/l, RCR 0.001
 Marine sediment:
 Exposure 0.000806 mg/kg, PNEC 0.827 mg/kg, RCR 0.001
 Frárennsli:
 Exposure 0.00016 mg/l, PNEC 27.5 mg/l, RCR 0
 Ræktunarjarðvegur:
 Exposure 0.0000669 mg/kg, PNEC 1.3 mg/kg, RCR 0

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method Used ECETOC TRA model.

Use in metal working fluids and rolling oils - Professional

Exposure

PROC1 Use in closed process, no likelihood of exposure.

Worker - inhalation, long-term - local and systemic:

Exposure 0.042 mg/m³, DNEL 83 mg/m³, RCR 0.000506

PROC2 Use in closed, continuous process with occasional controlled exposure.

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Filling/preparation of equipment from drums or containers.

Worker - inhalation, long-term - local and systemic:

Exposure 16.69 mg/m³, DNEL 83 mg/m³, RCR 0.201

PROC3 Use in closed batch process (synthesis or formulation).

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Bulk transfers

Filling/preparation of equipment from drums or containers.

Without local exhaust ventilation

PROC10 Roller application or brushing of adhesive and other coating.

Without local exhaust ventilation

PROC11 Spraying outside industrial settings and/or applications.

Without local exhaust ventilation

Worker - inhalation, long-term - local and systemic:

Exposure 20.87 mg/m³, DNEL 83 mg/m³, RCR 0.251

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

PROC13 Treatment of articles by dipping and pouring.

With local exhaust ventilation

Worker - inhalation, long-term - local and systemic:

Exposure 50.08 mg/m³, DNEL 83 mg/m³, RCR 0.603

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Equipment cleaning and maintenance

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Process sampling

PROC10 Roller application or brushing of adhesive and other coating.

With local exhaust ventilation

PROC11 Spraying outside industrial settings and/or applications.

With local exhaust ventilation

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic:

Exposure 41.73 mg/m³, DNEL 83 mg/m³, RCR 0.503

PROC17 Lubrication at high energy conditions and in partly open process.

Worker - inhalation, long-term - local and systemic:

Exposure 8.347 mg/m³, DNEL 83 mg/m³, RCR 0.101

Equipment cleaning and maintenance

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Assessment method

Used ECETOC TRA model.

Use in metal working fluids and rolling oils - Professional

Exposure

PROC1 Use in closed process, no likelihood of exposure.

Worker - dermal, long-term - systemic:

Exposure 0.343 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0291

PROC2 Use in closed, continuous process with occasional controlled exposure.

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Bulk transfers

Filling/preparation of equipment from drums or containers.

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

PROC13 Treatment of articles by dipping and pouring.

With local exhaust ventilation

PROC17 Lubrication at high energy conditions and in partly open process.

Worker - dermal, long-term - systemic:

Exposure 0.137 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0116

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Process sampling

Equipment cleaning and maintenance

Worker - dermal, long-term - systemic:

Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116

PROC10 Roller application or brushing of adhesive and other coating.

With local exhaust ventilation

Worker - dermal, long-term - systemic:

Exposure 5.486 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.465

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

PROC10 Roller application or brushing of adhesive and other coating.

Without local exhaust ventilation

PROC13 Treatment of articles by dipping and pouring.

Without local exhaust ventilation

Worker - dermal, long-term - systemic:

Exposure 2.743 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.232

PROC11 Spraying outside industrial settings and/or applications.

With local exhaust ventilation

Worker - dermal, long-term - systemic:

Exposure 0.107 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.009

PROC11 Spraying outside industrial settings and/or applications.

Without local exhaust ventilation

Worker - dermal, long-term - systemic:

Exposure 5.357 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.454

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario Use in Agrochemicals - Professional

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Use in Agrochemicals - Professional
Product category	PC27 Plant protection products.
Main sector	SU22 Professional uses

Environment

Environmental release category	ERC8a Wide dispersive indoor use of processing aids in open systems.
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Worker

Process category	PROC2 Use in closed, continuous process with occasional controlled exposure. PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC11 Spraying outside industrial settings and/or applications. PROC10 Roller application or brushing of adhesive and other coating. PROC13 Treatment of articles by dipping and pouring.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details	Nær yfir styrkleika allt að 100 %. Unless otherwise stated.
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Environmental factors not influenced by risk management measures

Dilution	Móttöku-yfirborðsvatnsflæði: 18400 m ³ /day
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Use in Agrochemicals - Professional

Risk management measures

Good practice	Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m ³ /day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details	Nær yfir styrkleika allt að 100 %. Unless otherwise stated. PROC13 Treatment of articles by dipping and pouring. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Nær yfir styrkleika allt að 25 %.
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Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	PROC2 Use in closed, continuous process with occasional controlled exposure. PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm ² . PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Both hands. Covers skin contact area up to 960 cm ² . PROC11 Spraying outside industrial settings and/or applications. Hands and forearms. Covers skin contact area up to 1500 cm ² .
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Other given operational conditions affecting workers exposure

Setting	Indoor/outdoor use.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 90%
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Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	PROC11 Spraying outside industrial settings and/or applications. Manual spraying Avoid carrying out activities involving exposure for more than 4 hours. PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC13 Treatment of articles by dipping and pouring. Avoid carrying out operation for more than 1 hour.
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Risk management measures

Use in Agrochemicals - Professional

Wear suitable gloves (tested to EN374), coverall and eye protection.
PROC11 Spraying outside industrial settings and/or applications.
Wear a respirator conforming to EN140 with Type A/P2 filter or better.

Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method	Used EUSES model.
Environmental release	Water: 0.005 kg/day Air: 0 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.000681 mg/l, PNEC 0.6 mg/l, RCR 0.001 Freshwater sediment: Exposure 0.009 mg/kg, PNEC 8.27 mg/kg, RCR 0.001 Marine water: Exposure 0.0000598 mg/l, PNEC 0.06 mg/l, RCR 0.001 Marine sediment: Exposure 0.000824 mg/kg, PNEC 0.827 mg/kg, RCR 0.001 Frárennsli: Exposure 0.000289 mg/l, PNEC 27.5 mg/l, RCR 0 Ræktunarjarðvegur: Exposure 0.0000953 mg/kg, PNEC 1.3 mg/kg, RCR 0

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
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Use in Agrochemicals - Professional

Exposure	<p>PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.</p> <p>PROC11 Spraying outside industrial settings and/or applications. Spraying/fogging by machine application Worker - inhalation, long-term - local and systemic: Exposure 41.73 mg/m³, DNEL 83 mg/m³, RCR 0.503</p> <p>PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. Worker - inhalation, long-term - local and systemic: Exposure 29.21 mg/m³, DNEL 83 mg/m³, RCR 0.352</p> <p>PROC11 Spraying outside industrial settings and/or applications. Spraying/fogging by manual application Worker - inhalation, long-term - local and systemic: Exposure 62.6 mg/m³, DNEL 83 mg/m³, RCR 0.754</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Equipment cleaning and maintenance Worker - inhalation, long-term - local and systemic: Exposure 50.08 mg/m³, DNEL 83 mg/m³, RCR 0.603</p> <p>PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Disposal of wastes Worker - inhalation, long-term - local and systemic: Exposure 35.06 mg/m³, DNEL 83 mg/m³, RCR 0.422</p> <p>PROC2 Use in closed, continuous process with occasional controlled exposure. Worker - inhalation, long-term - local and systemic: Exposure 58.43 mg/m³, DNEL 83 mg/m³, RCR 0.704</p>
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4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Assessment method	Used ECETOC TRA model.
Exposure	<p>PROC2 Use in closed, continuous process with occasional controlled exposure.</p> <p>PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.</p> <p>PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.</p> <p>PROC13 Treatment of articles by dipping and pouring. Worker - dermal, long-term - systemic: Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116</p> <p>PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. Worker - dermal, long-term - systemic: Exposure 6.857 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.581</p> <p>PROC11 Spraying outside industrial settings and/or applications. Spraying/fogging by manual application Worker - dermal, long-term - systemic: Exposure 2.143 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.182</p> <p>PROC11 Spraying outside industrial settings and/or applications. Spraying/fogging by machine application Worker - dermal, long-term - systemic: Exposure 0.429 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.036</p>

Use in Agrochemicals - Professional

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario Use in Functional Fluids - Industrial

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Use in Functional Fluids - Industrial
Product category	PC17 Hydraulic fluids.
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC7 Industrial use of substances in closed systems.
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Worker

Process category	PROC2 Use in closed, continuous process with occasional controlled exposure. PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details	Nær yfir styrkleika allt að 100 %. Unless otherwise stated.
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Amounts used

Daily amount per site: 0.5 tonnes
Annual amount per site: 120 tonnes

Use in Functional Fluids - Industrial

Environmental factors not influenced by risk management measures

Dilution Móttöku-yfirborðsvatnsflæði: 18400 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts PROC2 Use in closed, continuous process with occasional controlled exposure. PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor. Unless otherwise stated.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 90% Store substance within a closed system.

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.

Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method Used EUSES model.

Use in Functional Fluids - Industrial

Environmental release	Water: 0.5 kg/day Air: 2.5 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.003 mg/l, PNEC 0.6 mg/l, RCR 0.005 Freshwater sediment: Exposure 0.044 mg/kg, PNEC 8.27 mg/kg, RCR 0.005 Marine water: Exposure 0.000316 mg/l, PNEC 0.06 mg/l, RCR 0.005 Marine sediment: Exposure 0.005 mg/kg, PNEC 0.827 mg/kg, RCR 0.005 Frárennsli: Exposure 0.0029 mg/l, PNEC 27.5 mg/l, RCR 0.001 Ræktunarjarðvegur: Exposure 0.007 mg/kg, PNEC 1.3 mg/kg, RCR 0.005

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
Exposure	<p>PROC2 Use in closed, continuous process with occasional controlled exposure. Bulk transfers</p> <p>PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. (open systems) Worker - inhalation, long-term - local and systemic: Exposure 41.73 mg/m³, DNEL 83 mg/m³, RCR 0.503</p> <p>PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. Worker - inhalation, long-term - local and systemic: Exposure 6.26 mg/m³, DNEL 83 mg/m³, RCR 0.075</p> <p>PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Worker - inhalation, long-term - local and systemic: Exposure 20.87 mg/m³, DNEL 83 mg/m³, RCR 0.251</p> <p>PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. (closed systems) Worker - inhalation, long-term - local and systemic: Exposure 8.347 mg/m³, DNEL 83 mg/m³, RCR 0.101</p> <p>PROC2 Use in closed, continuous process with occasional controlled exposure. Product storage Worker - inhalation, long-term - local and systemic: Exposure 29.21 mg/m³, DNEL 83 mg/m³, RCR 0.352</p>

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Use in Functional Fluids - Industrial

Assessment method

Used ECETOC TRA model.

Exposure

PROC2 Use in closed, continuous process with occasional controlled exposure.

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. (closed systems)

Worker - dermal, long-term - systemic:

Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. (open systems)

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

Worker - dermal, long-term - systemic:

Exposure 0.686 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.058

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Worker - dermal, long-term - systemic:

Exposure 0.027 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario Use in Functional Fluids - Professional

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Use in Functional Fluids - Professional
Product category	PC17 Hydraulic fluids.
Main sector	SU22 Professional uses

Environment

Environmental release category	ERC7 Industrial use of substances in closed systems.
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Worker

Process category	PROC2 Use in closed, continuous process with occasional controlled exposure. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC20 Heat and pressure transfer fluids in dispersive use but closed systems.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details	Nær yfir styrkleika allt að 100 %. Unless otherwise stated.
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Environmental factors not influenced by risk management measures

Dilution	Móttöku-yfirborðsvatnsflæði: 18400 m ³ /day
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Risk management measures

Use in Functional Fluids - Professional

Good practice	Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m ³ /day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts PROC2 Use in closed, continuous process with occasional controlled exposure. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC20 Heat and pressure transfer fluids in dispersive use but closed systems. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor. Unless otherwise stated.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 90% Store substance within a closed system.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Avoid carrying out activities involving exposure for more than 4 hours.

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.

Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method Used EUSES model.

Use in Functional Fluids - Professional

Environmental release	Water: 0.002 kg/day Air: 0 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.000661 mg/l, PNEC 0.6 mg/l, RCR 0.001 Freshwater sediment: Exposure 0.009 mg/kg, PNEC 8.27 mg/kg, RCR 0.001 Marine water: Exposure 0.0000579 mg/l, PNEC 0.06 mg/l, RCR 0.001 Marine sediment: Exposure 0.000798 mg/kg, PNEC 0.827 mg/kg, RCR 0.001 Frárennsli: Exposure 0.0000963 mg/l, PNEC 27.5 mg/l, RCR 0 Ræktunarjarðvegur: Exposure 0.0000528 mg/kg, PNEC 1.3 mg/kg, RCR 0

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
Exposure	PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Worker - inhalation, long-term - local and systemic: Exposure 50.08 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.603 PROC2 Use in closed, continuous process with occasional controlled exposure. Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants. PROC20 Heat and pressure transfer fluids in dispersive use but closed systems. Worker - inhalation, long-term - local and systemic: Exposure 16.69 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.201 PROC2 Use in closed, continuous process with occasional controlled exposure. Product storage Worker - inhalation, long-term - local and systemic: Exposure 58.43 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.704

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Assessment method	Used ECETOC TRA model.
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Use in Functional Fluids - Professional

Exposure

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Worker - dermal, long-term - systemic:

Exposure 0.027 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

Worker - dermal, long-term - systemic:

Exposure 0.686 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.058

PROC2 Use in closed, continuous process with occasional controlled exposure.

Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants.

PROC20 Heat and pressure transfer fluids in dispersive use but closed systems.

Worker - dermal, long-term - systemic:

Exposure 0.137 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.058

PROC2 Use in closed, continuous process with occasional controlled exposure.

Storage

Worker - dermal, long-term - systemic:

Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario Use in Laboratories - Industrial

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Use in Laboratories - Industrial
Product category	PC21 Laboratory chemicals.
Main sector	SU3 Industrial uses
<u>Environment</u>	
Environmental release category	ERC4 Industrial use of processing aids in processes and products, not becoming part of articles.
<u>Worker</u>	
Process category	PROC10 Roller application or brushing of adhesive and other coating. PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %. Unless otherwise stated.

Amounts used

Daily amount per site: 5 tonnes
Annual amount per site: 100 tonnes

Environmental factors not influenced by risk management measures

Dilution Móttöku-yfirborðsvatnsflæði: 18400 m³/day

Risk management measures

Use in Laboratories - Industrial

Good practice	Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m ³ /day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts Palm of one hand. PROC15 Use as laboratory reagent. Covers skin contact area up to 240 cm². PROC10 Roller application or brushing of adhesive and other coating. Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor. Unless otherwise stated.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures No specific risk management measure identified beyond those operational conditions stated.

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.

Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method Used EUSES model.

Environmental release Water: 100 kg/day
Air: 125 kg/day
Soil: 0 kg/day

Environmental exposure Fresh water:
Exposure 0.584 mg/l, PNEC 0.6 mg/l, RCR 0.973
Freshwater sediment:
Exposure 8.05 mg/kg, PNEC 8.27 mg/kg, RCR 0.973
Marine water:
Exposure 0.058 mg/l, PNEC 0.06 mg/l, RCR 0.973
Marine sediment:
Exposure 0.805 mg/kg, PNEC 0.827 mg/kg, RCR 0.97
Frárennsli:
Exposure 5.84 mg/l, PNEC 27.5 mg/l, RCR 0.212
Ræktunarjarðvegur:
Exposure 1.29 mg/kg, PNEC 1.3 mg/kg, RCR 0.992

4. Guidance to check compliance with the exposure scenario (Environment 1)

Use in Laboratories - Industrial

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
Exposure	PROC10 Roller application or brushing of adhesive and other coating. Worker - inhalation, long-term - local and systemic: Exposure 41.73 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.503 Worker - dermal, long-term - systemic: Exposure 2.743 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.232 PROC15 Use as laboratory reagent. Worker - inhalation, long-term - local and systemic: Exposure 41.73 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.503 Worker - dermal, long-term - systemic: Exposure 0.343 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.029

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario Use in Laboratories - Professional

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Use in Laboratories - Professional
Product category	PC21 Laboratory chemicals.
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC4 Industrial use of processing aids in processes and products, not becoming part of articles.
<u>Worker</u>	
Process category	PROC10 Roller application or brushing of adhesive and other coating. PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details	Nær yfir styrkleika allt að 100 %. Unless otherwise stated.
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Environmental factors not influenced by risk management measures

Dilution	Móttöku-yfirborðsvatnsflæði: 18400 m ³ /day
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Risk management measures

Good practice	Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m ³ /day

Use in Laboratories - Professional

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts Palm of one hand. PROC15 Use as laboratory reagent. Covers skin contact area up to 240 cm². PROC10 Roller application or brushing of adhesive and other coating. Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor. Unless otherwise stated.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures No specific risk management measure identified beyond those operational conditions stated.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures PROC10 Roller application or brushing of adhesive and other coating. Avoid carrying out activities involving exposure for more than 15 minutes.

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.

Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method Used EUSES model.

Environmental release
Water: 0.028 kg/day
Air: 0 kg/day
Soil: 0 kg/day

Environmental exposure
Fresh water:
Exposure 0.000812 mg/l, PNEC 0.6 mg/l, RCR 0.001
Freshwater sediment:
Exposure 0.011 mg/kg, PNEC 8.27 mg/kg, RCR 0.001
Marine water:
Exposure 0.0000729 mg/l, PNEC 0.06 mg/l, RCR 0.001
Marine sediment:
Exposure 0.001 mg/kg, PNEC 0.827 mg/kg, RCR 0.001
Frárennsli:
Exposure 0.002 mg/l, PNEC 27.5 mg/l, RCR 0
Ræktunarjarðvegur:
Exposure 0.000386 mg/kg, PNEC 1.3 mg/kg, RCR 0

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

Use in Laboratories - Professional

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
Exposure	PROC10 Roller application or brushing of adhesive and other coating. Worker - inhalation, long-term - local and systemic: Exposure 41.73 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.503 Worker - dermal, long-term - systemic: Exposure 2.743 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.232 PROC15 Use as laboratory reagent. Worker - inhalation, long-term - local and systemic: Exposure 41.73 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.503 Worker - dermal, long-term - systemic: Exposure 0.343 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.029

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario

Rubber production and processing - Industrial

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Rubber production and processing - Industrial
Main sector	SU3 Industrial uses
<u>Environment</u>	
Environmental release category	ERC4 Industrial use of processing aids in processes and products, not becoming part of articles.
<u>Worker</u>	
Process category	PROC2 Use in closed, continuous process with occasional controlled exposure. PROC3 Use in closed batch process (synthesis or formulation). PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). PROC6 Calendering operations. PROC7 Spraying in industrial settings and applications. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC13 Treatment of articles by dipping and pouring. PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation. PROC21 Low energy manipulation of substances bound in materials and/or articles

2. Conditions of use affecting exposure (Industrial - Environment 1)

Rubber production and processing - Industrial

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %. Unless otherwise stated.

Amounts used

Daily amount per site: 5 tonnes
Annual amount per site: 100 tonnes

Environmental factors not influenced by risk management measures

Dilution Móttöku-yfirborðsvatnsflæði: 18400 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts PROC3 Use in closed batch process (synthesis or formulation). Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Use in closed, continuous process with occasional controlled exposure. PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC6 Calendering operations. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Both hands. Covers skin contact area up to 960 cm². PROC7 Spraying in industrial settings and applications. Hands and forearms. Covers skin contact area up to 1500 cm². PROC21 Low energy manipulation of substances bound in materials and/or articles Hands and forearms. Covers skin contact area up to 1980 cm².

Other given operational conditions affecting workers exposure

Setting Indoor. Unless otherwise stated.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Rubber production and processing - Industrial

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 90% PROC7 Spraying in industrial settings and applications. Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.

Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method	Used EUSES model.
Environmental release	Water: 50 kg/day Air: 5000 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.292 mg/l, PNEC 0.6 mg/l, RCR 0.487 Freshwater sediment: Exposure 4.02 mg/kg, PNEC 8.27 mg/kg, RCR 0.486 Marine water: Exposure 0.029 mg/l, PNEC 0.06 mg/l, RCR 0.487 Marine sediment: Exposure 0.402 mg/kg, PNEC 0.827 mg/kg, RCR 0.484 Frárennsli: Exposure 2.92 mg/l, PNEC 27.5 mg/l, RCR 0.106 Ræktunarjarðvegur: Exposure 0.656 mg/kg, PNEC 1.3 mg/kg, RCR 0.505

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
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Rubber production and processing - Industrial

Exposure

PROC2 Use in closed, continuous process with occasional controlled exposure.

Worker - inhalation, long-term - local and systemic:

Exposure 41.73 mg/m³, DNEL 83 mg/m³, RCR 0.503

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Worker - inhalation, long-term - local and systemic:

Exposure 6.26 mg/m³, DNEL 83 mg/m³, RCR 0.075

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).

PROC6 Calendering operations.

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

PROC13 Treatment of articles by dipping and pouring.

PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.

Worker - inhalation, long-term - local and systemic:

Exposure 20.87 mg/m³, DNEL 83 mg/m³, RCR 0.251

PROC3 Use in closed batch process (synthesis or formulation).

Worker - inhalation, long-term - local and systemic:

Exposure 10.43 mg/m³, DNEL 83 mg/m³, RCR 0.126

PROC7 Spraying in industrial settings and applications.

Worker - inhalation, long-term - local and systemic:

Exposure 52.17 mg/m³, DNEL 83 mg/m³, RCR 0.629

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Assessment method

Used ECETOC TRA model.

Rubber production and processing - Industrial

Exposure

PROC2 Use in closed, continuous process with occasional controlled exposure.

Worker - dermal, long-term - systemic:

Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

Worker - dermal, long-term - systemic:

Exposure 0.686 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0581

PROC3 Use in closed batch process (synthesis or formulation).

Worker - dermal, long-term - systemic:

Exposure 0.034 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.003

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).

Worker - dermal, long-term - systemic:

Exposure 0.014 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.001

PROC6 Calendering operations.

Worker - dermal, long-term - systemic:

Exposure 0.274 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.023

PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.

Worker - dermal, long-term - systemic:

Exposure 0.343 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0291

PROC7 Spraying in industrial settings and applications.

Worker - dermal, long-term - systemic:

Exposure 0.429 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.036

PROC13 Treatment of articles by dipping and pouring.

Worker - dermal, long-term - systemic:

Exposure 0.137 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0116

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Worker - inhalation, long-term - systemic:

Exposure 0.027 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.002

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario Polymer Processing - Industrial

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Polymer Processing - Industrial
Product category	PC32 Polymer preparations and compounds.
Main sector	SU3 Industrial uses
<u>Environment</u>	
Environmental release category	ERC4 Industrial use of processing aids in processes and products, not becoming part of articles.
<u>Worker</u>	
Process category	<p>PROC2 Use in closed, continuous process with occasional controlled exposure.</p> <p>PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.</p> <p>PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).</p> <p>PROC6 Calendering operations.</p> <p>PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.</p> <p>PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.</p> <p>PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.</p> <p>PROC21 Low energy manipulation of substances bound in materials and/or articles</p>

Polymer Processing - Industrial

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %. Unless otherwise stated.

Amounts used

Daily amount per site: 5 tonnes

Annual amount per site: 100 tonnes

Environmental factors not influenced by risk management measures

Dilution Móttöku-yfirborðsvatnsflæði: 18400 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts PROC2 Use in closed, continuous process with occasional controlled exposure. PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC13 Treatment of articles by dipping and pouring. PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation. Palm of both hands. Covers skin contact area up to 480 cm². PROC6 Calendering operations. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Both hands. Covers skin contact area up to 960 cm². PROC21 Low energy manipulation of substances bound in materials and/or articles Hands and forearms. Covers skin contact area up to 1980 cm².

Other given operational conditions affecting workers exposure

Setting Indoor. Unless otherwise stated.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Polymer Processing - Industrial

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 90%

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Wear a respirator conforming to EN140 with Type A/P2 filter or better.

Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method	Used EUSES model.
Environmental release	Water: 0 kg/day Air: 250 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.000255 mg/l, PNEC 0.6 mg/l, RCR 0 Freshwater sediment: Exposure 0.004 mg/kg, PNEC 8.27 mg/kg, RCR 0 Marine water: Exposure 0.0000233 mg/l, PNEC 0.06 mg/l, RCR 0 Marine sediment: Exposure 0.000321 mg/kg, PNEC 0.827 mg/kg, RCR 0 Frárennsli: Exposure 0 mg/l, PNEC 27.5 mg/l, RCR 0 Ræktunarjarðvegur: Exposure 0.000601 mg/kg, PNEC 1.3 mg/kg, RCR 0

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
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Polymer Processing - Industrial

Exposure

PROC2 Use in closed, continuous process with occasional controlled exposure.

Bulk transfers

Storage

Worker - inhalation, long-term - local and systemic:

Exposure 29.21 mg/m³, DNEL 83 mg/m³, RCR 0.352

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Worker - inhalation, long-term - local and systemic:

Exposure 6.26 mg/m³, DNEL 83 mg/m³, RCR 0.075

PROC2 Use in closed, continuous process with occasional controlled exposure.

Bulk weighing

Worker - inhalation, long-term - local and systemic:

Exposure 41.73 mg/m³, DNEL 83 mg/m³, RCR 0.503

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).

PROC6 Calendering operations.

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

PROC13 Treatment of articles by dipping and pouring.

PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.

Worker - inhalation, long-term - local and systemic:

Exposure 20.87 mg/m³, DNEL 83 mg/m³, RCR 0.251

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Worker - inhalation, long-term - local and systemic:

Exposure 8.347 mg/m³, DNEL 83 mg/m³, RCR 0.101

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Assessment method

Used ECETOC TRA model.

Polymer Processing - Industrial

Exposure

PROC2 Use in closed, continuous process with occasional controlled exposure.

Worker - dermal, long-term - systemic:

Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

Small scale weighing

Worker - dermal, long-term - systemic:

Exposure 0.686 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0581

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).

Worker - dermal, long-term - systemic:

Exposure 0.014 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.001

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

Transfer of material from one container to another

PROC6 Calendering operations.

Worker - dermal, long-term - systemic:

Exposure 0.274 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.023

PROC13 Treatment of articles by dipping and pouring.

Worker - dermal, long-term - systemic:

Exposure 0.137 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0116

PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.

Extrusion and masterbatching

Worker - dermal, long-term - systemic:

Exposure 0.343 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0291

PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.

Injection moulding of articles

Worker - inhalation, long-term - systemic:

Exposure 0.069 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.006

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Worker - dermal, long-term - systemic:

Exposure 2.743 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.232

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario Polymer Processing - Professional

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Polymer Processing - Professional
Product category	PC32 Polymer preparations and compounds.
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC4 Industrial use of processing aids in processes and products, not becoming part of articles.
<u>Worker</u>	
Process category	PROC2 Use in closed, continuous process with occasional controlled exposure. PROC6 Calendering operations. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation. PROC21 Low energy manipulation of substances bound in materials and/or articles

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details	Nær yfir styrkleika allt að 100 %. Unless otherwise stated.
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Environmental factors not influenced by risk management measures

Dilution	Móttöku-yfirborðsvatnsflæði: 18400 m ³ /day
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Polymer Processing - Professional

Risk management measures

Good practice	Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m ³ /day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details	Nær yfir styrkleika allt að 100 %.
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Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	PROC2 Use in closed, continuous process with occasional controlled exposure. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation. Palm of both hands. Covers skin contact area up to 480 cm ² . PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Both hands. Covers skin contact area up to 960 cm ² . PROC21 Low energy manipulation of substances bound in materials and/or articles PROC6 Calendering operations. Hands and forearms. Covers skin contact area up to 1980 cm ² .
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Other given operational conditions affecting workers exposure

Setting	Indoor. Unless otherwise stated.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 90%
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Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	PROC2 Use in closed, continuous process with occasional controlled exposure. Bulk transfers Avoid carrying out activities involving exposure for more than 4 hours.
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Risk management measures

Polymer Processing - Professional

Wear suitable gloves (tested to EN374), coverall and eye protection.

PROC6 Calendering operations.

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.

Wear a respirator conforming to EN140 with Type A/P2 filter or better.

Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method	Used EUSES model.
Environmental release	Water: 0.001 kg/day Air: 0 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.000655 mg/l, PNEC 0.6 mg/l, RCR 0 Freshwater sediment: Exposure 0.009 mg/kg, PNEC 8.27 mg/kg, RCR 0.001 Marine water: Exposure 0.000572 mg/l, PNEC 0.06 mg/l, RCR 0.001 Marine sediment: Exposure 0.000789 mg/kg, PNEC 0.827 mg/kg, RCR 0.001 Frárennsli: Exposure 0.0000321 mg/l, PNEC 27.5 mg/l, RCR 0 Ræktunarjarðvegur: Exposure 0.0000386 mg/kg, PNEC 1.3 mg/kg, RCR 0

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
Exposure	PROC2 Use in closed, continuous process with occasional controlled exposure. Bulk transfers Worker - inhalation, long-term - local and systemic: Exposure 50.08 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.603 PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. Worker - inhalation, long-term - local and systemic: Exposure 20.87 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.251 PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation. Worker - inhalation, long-term - local and systemic: Exposure 41.73 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.503 PROC2 Use in closed, continuous process with occasional controlled exposure. Storage Worker - inhalation, long-term - local and systemic: Exposure 16.69 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.201

Polymer Processing - Professional

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Assessment method	Used ECETOC TRA model.
Exposure	<p>PROC2 Use in closed, continuous process with occasional controlled exposure. Bulk transfers Worker - dermal, long-term - systemic: Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116</p> <p>PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. Worker - dermal, long-term - systemic: Exposure 0.686 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0581</p> <p>PROC6 Calendering operations. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Worker - dermal, long-term - systemic: Exposure 2.743 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.232</p> <p>PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation. Worker - dermal, long-term - systemic: Exposure 3.429 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.291</p> <p>PROC2 Use in closed, continuous process with occasional controlled exposure. Storage Worker - dermal, long-term - systemic: Exposure 0.137 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0116</p>

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario Use in Water Treatment - Industrial

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Use in Water Treatment - Industrial
Product category	PC37 Water treatment chemicals.
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC4 Industrial use of processing aids in processes and products, not becoming part of articles.
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Worker

Process category	PROC1 Use in closed process, no likelihood of exposure. PROC2 Use in closed, continuous process with occasional controlled exposure. PROC3 Use in closed batch process (synthesis or formulation). PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC13 Treatment of articles by dipping and pouring.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details	Nær yfir styrkleika allt að 100 %. Unless otherwise stated.
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Amounts used

Use in Water Treatment - Industrial

Daily amount per site: 0.106 tonnes

Annual amount per site: 32 tonnes

Environmental factors not influenced by risk management measures

Dilution Móttöku-yfirborðsvatnsflæði: 18400 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts PROC1 Use in closed process, no likelihood of exposure. PROC3 Use in closed batch process (synthesis or formulation). Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Use in closed, continuous process with occasional controlled exposure. PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor. Unless otherwise stated.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 90%

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.

Assumes a good basic standard of occupational hygiene is implemented.

Use in Water Treatment - Industrial

3. Exposure estimation (Environment 1)

Assessment method	Used EUSES model.
Environmental release	Water: 100.7 kg/day Air: 5.3 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.588 mg/l, PNEC 0.6 mg/l, RCR 0.98 Freshwater sediment: Exposure 8.1 mg/kg, PNEC 8.27 mg/kg, RCR 0.979 Marine water: Exposure 0.059 mg/l, PNEC 0.06 mg/l, RCR 0.98 Marine sediment: Exposure 0.81 mg/kg, PNEC 0.827 mg/kg, RCR 0.976 Frárennsli: Exposure 5.88 mg/l, PNEC 27.5 mg/l, RCR 0.214 Ræktunarjarðvegur: Exposure 1.3 mg/kg, PNEC 1.3 mg/kg, RCR 1

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
Exposure	PROC2 Use in closed, continuous process with occasional controlled exposure. Worker - inhalation, long-term - local and systemic: Exposure 41.73 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.503 PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. Worker - inhalation, long-term - local and systemic: Exposure 6.26 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.075 PROC3 Use in closed batch process (synthesis or formulation). Worker - inhalation, long-term - local and systemic: Exposure 10.43 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.126 PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. Worker - inhalation, long-term - local and systemic: Exposure 8.347 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.101 PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC13 Treatment of articles by dipping and pouring. Worker - inhalation, long-term - local and systemic: Exposure 20.87 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.251 PROC1 Use in closed process, no likelihood of exposure. Worker - inhalation, long-term - local and systemic: Exposure 0.042 mg/m ³ , DNEL 83 mg/m ³ , RCR 0.000506

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Use in Water Treatment - Industrial

Assessment method

Used ECETOC TRA model.

Exposure

PROC2 Use in closed, continuous process with occasional controlled exposure.

Worker - dermal, long-term - systemic:

Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Worker - dermal, long-term - systemic:

Exposure 0.686 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0581

PROC3 Use in closed batch process (synthesis or formulation).

Worker - dermal, long-term - systemic:

Exposure 0.034 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.003

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

PROC13 Treatment of articles by dipping and pouring.

Worker - dermal, long-term - systemic:

Exposure 0.137 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0116

PROC1 Use in closed process, no likelihood of exposure.

Worker - dermal, long-term - systemic:

Exposure 0.343 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0291

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp



Exposure scenario Use as an intermediate

Identification

Product name	Methyl Isobutyl Ketone
REACH skráningarnúmer	01-2119473980-30-XXXX
CAS númer	108-10-1
EB númer	203-550-1
ESB skráarnúmer	606-004-00-4
Birgi	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Use as an intermediate
Main sector	SU3 Industrial uses
<u>Environment</u>	
Environmental release category	ERC6a Industrial use resulting in manufacture of another substance (use of intermediates).
<u>Worker</u>	
Process category	PROC1 Use in closed process, no likelihood of exposure. PROC2 Use in closed, continuous process with occasional controlled exposure. PROC3 Use in closed batch process (synthesis or formulation). PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details	Nær yfir styrkleika allt að 100 %. Unless otherwise stated.
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Amounts used

Daily amount per site: 10.1 tonnes
Annual amount per site: 3030 tonnes

Use as an intermediate

Environmental factors not influenced by risk management measures

Dilution Móttöku-yfirborðsvatnsflæði: 18400 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases. Dispose of waste product or used containers according to local regulations

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts PROC1 Use in closed process, no likelihood of exposure. PROC3 Use in closed batch process (synthesis or formulation). PROC15 Use as laboratory reagent. Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Use in closed, continuous process with occasional controlled exposure. PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor/outdoor use.

Temperature Assumes activities are at room temperature.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. Provide extract ventilation to points where emissions occur. skilvirkni upp á a.m.k. 90% Store substance within a closed system.

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.

Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Use as an intermediate

Assessment method	Used EUSES model.
Environmental release	Water: 101 kg/day Air: 2.02 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.59 mg/l, PNEC 0.6 mg/l, RCR 0.983 Freshwater sediment: Exposure 7.13 mg/kg, PNEC 8.27 mg/kg, RCR 0.983 Marine water: Exposure 0.059 mg/l, PNEC 0.06 mg/l, RCR 0.983 Marine sediment: Exposure 0.813 mg/kg, PNEC 0.827 mg/kg, RCR 0.98 Frárennsli: Exposure 5.89 mg/l, PNEC 27.5 mg/l, RCR 0.214 Ræktunarjarðvegur: Exposure 1.3 mg/kg, PNEC 1.3 mg/kg, RCR 1

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users
http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
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Use as an intermediate

Exposure

PROC1 Use in closed process, no likelihood of exposure.

Worker - inhalation, long-term - local and systemic:

Exposure 0.042 mg/m³, DNEL 83 mg/m³, RCR 0.0005

PROC2 Use in closed, continuous process with occasional controlled exposure.

General exposures (closed systems)

Indoor.

Worker - inhalation, long-term - local and systemic:

Exposure 4.173 mg/m³, DNEL 83 mg/m³, RCR 0.05

PROC2 Use in closed, continuous process with occasional controlled exposure.

General exposures (closed systems)

Outdoor.

Worker - inhalation, long-term - local and systemic:

Exposure 29.21 mg/m³, DNEL 83 mg/m³, RCR 0.352

PROC3 Use in closed batch process (synthesis or formulation).

Indoor.

Worker - inhalation, long-term - local and systemic:

Exposure 10.43 mg/m³, DNEL 83 mg/m³, RCR 0.126

PROC3 Use in closed batch process (synthesis or formulation).

Outdoor.

Worker - inhalation, long-term - local and systemic:

Exposure 73.03 mg/m³, DNEL 83 mg/m³, RCR 0.88

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Indoor.

Worker - inhalation, long-term - local and systemic:

Exposure 8.347 mg/m³, DNEL 83 mg/m³, RCR 0.101

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Outdoor.

Worker - inhalation, long-term - local and systemic:

Exposure 58.43 mg/m³, DNEL 83 mg/m³, RCR 0.704

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Worker - inhalation, long-term - local and systemic:

Exposure 6.26 mg/m³, DNEL 83 mg/m³, RCR 0.075

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Worker - inhalation, long-term - local and systemic:

Exposure 20.87 mg/m³, DNEL 83 mg/m³, RCR 0.251

PROC2 Use in closed, continuous process with occasional controlled exposure.

Storage

PROC15 Use as laboratory reagent.

Worker - inhalation, long-term - local and systemic:

Exposure 41.73 mg/m³, DNEL 83 mg/m³, RCR 0.503

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp

3. Exposure estimation (Health 2)

Assessment method

Used ECETOC TRA model.

Use as an intermediate

Exposure

PROC1 Use in closed process, no likelihood of exposure.

PROC3 Use in closed batch process (synthesis or formulation).

Outdoor.

PROC15 Use as laboratory reagent.

Worker - dermal, long-term - systemic:

Exposure 0.343 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0291

PROC2 Use in closed, continuous process with occasional controlled exposure.

General exposures

Indoor.

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Bulk transfers

Worker - dermal, long-term - systemic:

Exposure 0.137 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0116

PROC2 Use in closed, continuous process with occasional controlled exposure.

General exposures

Outdoor.

PROC2 Use in closed, continuous process with occasional controlled exposure.

Storage

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Outdoor.

Worker - dermal, long-term - systemic:

Exposure 1.371 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.116

PROC3 Use in closed batch process (synthesis or formulation).

Indoor.

Worker - dermal, long-term - systemic:

Exposure 0.034 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.00288

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Indoor.

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

With sample collection

Worker - dermal, long-term - systemic:

Exposure 0.686 mg/kg/day, DNEL 11.8 mg/kg/day, RCR 0.0581

4. Guidance to check compliance with the exposure scenario (Health 2)

ECHA guidance for downstream users

http://echa.europa.eu/chem_data/transit_measures/vrar_en.asp