



ÖRYGGISBLAÐ FORMIC ACID >78.5% <=85%

KAFLI 1: Auðkenning efnisins eða efnablöndunnar og félagsins eða fyrirtækisins

1.1 Vörukenni

Heiti vöru	FORMIC ACID >78.5% <=85%
Vörunúmer	45399
Samheiti; viðskiptaheiti	FORMIC ACID 85%, FORMIC ACID 85% O&G, FORMIC ACID 85% NO, FORMIC ACID 85% SPECIAL GRADE, METHANOIC ACID 85%, FORMIC ACID 85% SOL

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

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.	45399

KAFLI 2: Hættugreining

2.1 Flokkun efnisins eða blöndunnar

Flokkun (EB 1272/2008)

Líkamleg hættu	Óflokkað
Heilbrigðishættu	Bráð eit. 4 - H302 Bráð eit. 3 - H331 Húð æt. 1B - H314 Augnskað. 1 - H318
Umhverfishættu	Óflokkað

2.2. Merkingaratriði

Skýringarmynd



Viðvörðunorð	Hætta
Hættusetningar	H302 Hættulegt við inntöku. H314 Veldur alvarlegum bruna á húð og augnskaða. H331 Eitrað við innöndun.

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Varnaðarsetning	P260 Andið ekki að ykkur gufu eða ýringi. P271 Notið eingöngu utandyra eða í vel loftræstu rými. P301+P310 EFTIR INNTÖKU: Hringið umsvifalaust í EITRUNARMÍÐSTÖÐ/ lækni. P303+P361+P353 BERIST EFNID Á HÚÐ (eða í hár): Farið strax úr fötum sem óhreinkast af efninu. Skolið húðina með vatni/ Farið í sturtu. P305+P351+P338 BERIST EFNID Í AUGU: Skolið varlega með vatni í nokkrar mínútur. Fjarlægjið snertilinsur ef það er auðvelt. Skolið áfram. P501 Fargið innihaldi/ íláti í samræmi við landsreglugerðir.
Viðbótarupplýsingar	EUH071 Ætandi í öndunarvegi.
Inniheldur	FORMIC ACID ...%

2.3. Aðrar hættur

Þessi vara inniheldur engin efni sem flokkast sem þrávirk efni sem safnast upp í lífverum og eru eitruð (PBT) né mjög þrávirk og safnast upp í miklu magni í lífverum (vPvB).

KAFLI 3: Samsetning innihaldsefna/upplýsingar um innihaldsefni**3.2. Blöndur**

FORMIC ACID ...%			78.5 - 85
CAS númer: 64-18-6	EB númer: 200-579-1	REACH skráningarnúmer: 01-2119491174-37-XXXX	
Flokkun	Eldf. vökví 3 - H226 Bráð eit. 4 - H302 Bráð eit. 3 - H331 Húð æt. 1A - H314 Augnskað. 1 - H318		

Heildartexti fyrir allar hættusetningar kemur fram í kafla 16.

KAFLI 4: Ráðstafanir í skyndihjálpi**4.1. Lýsing á ráðstöfunum í skyndihjálpi**

Innöndun	Færið viðkomandi samstundis undir ferskt loft. Leitið samstundis læknishjálpar.
Inntaka	Færið viðkomandi undir ferkst loft og haldið hlýjum og í hvíldarstöðu sem þægileg er til öndunar. Hreinsið munninn vel með vatni. Gefið mikið af vatni að drekka. Ekki framkalla uppköst. Leitið samstundis læknishjálpar.
Snerting við húð	Fjarlægjið mengaðan fatnað og skolið húð vel með vatni. Leitið samstundis læknishjálpar.
Snerting við augu	Skolið samstundis með miklu vatni. Fjarlægjið augnlinsur og haldið augnlokunum vel opnum. Haldið áfram að skola í að minnsta kosti 15 mínútur. Leitið samstundis læknishjálpar. Haldið áfram að skola.

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

Innöndun	Ætandi í öndunarvegi. Eitrað við innöndun.
Inntaka	Getur valdið efnabruna í munn, vélinda og maga. Hættulegt við inntöku.
Snerting við húð	Getur valdið alvarlegum efnabruna á húð.
Snerting við augu	Þessi vara er ætandi. Getur valdið varanlegum skaða ef augað er ekki skolað samstundis með miklu vatni.

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

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Athugasemdir fyrir lækninn Meðhöndlið í samræmi við einkenni. Barksterum til innöndunar skammtur úðabrusa

KAFLI 5: Ráðstafanir vegna slökkviaðgerða**5.1. Slökkvibúnaður**

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

Óhentugt slökkviefni Ekki nota vatnsdælu sem slökkvitæki, þar sem það mun dreifa eldinum.

5.2. Sérstakar hættur af völdum efnisins eða blöndunnar

Hættuleg brennanleg efni Myndefni hitaniðurbrots eða bruna geta innfalið eftirfarandi efni: Oxíð af kolefni. Eitruð gös og gufur.

5.3. Ráðgjöf fyrir slökkviliðsmenn

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

KAFLI 6: Ráðstafanir ef efni fer óvart til spillis eða er losað fyrir slysi**6.1. Öryggisráðstafanir fyrir fólk, hlífðarbúnaður og neyðarráðstafanir**

Persónulegar varúðarráðstafanir Fylgið varúðarráðstöfunum um örugga meðhöndlun sem lýst er í þessum öryggisleiðbeiningum. Varist snertingu við húð og augu. Notið öndunargrímu ef loftræsting er ófullnægjandi.

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

KAFLI 7: Meðhöndlun og geymsla**7.1. Varúðarráðstafanir um örugga meðhöndlun**

Varúðarráðstafanir fyrir notkun Forðist innöndun gufa/úða og snertingu við húð og augu. Tryggið næga loftun.

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

Varúðarráðstafanir fyrir geymslu Geymið í þétt lokuðu, upprunalegu íláti á þurrum, svölum og vel loftræstum stað. Geymið við hitastig á milli > 0°C og < 30°C. Hvarfast við basa og myndar hita. Forðist snertingu við basa. Avoid Amines

Geymsluflokkur Geymsla fyrir ætandi efni.

7.3. Sértek endanleg notkun

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

KAFLI 8: Váhrifavarnir/persónuhlífar**8.1. Takmörkunarfæribreytur**

Viðmiðunarmörk fyrir váhrif í starfi

FORMIC ACID ...%

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H

Langtíma váhrifamörk(8-klst TWA): 5 ppm 9 mg/m³

H = efnið getur auðveldlega borist inn í líkamann gegnum húð

FORMIC ACID ...% (CAS: 64-18-6)

DNEL	Atvinnugrein - Innöndun; Langtíma staðbundin áhrif: 9.5 mg/m ³ Consumer - Innöndun; Skammtíma staðbundin áhrif: 9.5 mg/m ³ Consumer - Innöndun; Langtíma staðbundin áhrif: 3 mg/m ³ Atvinnugrein - Innöndun; Skammtíma staðbundin áhrif: 19 mg/m ³
PNEC	- Ferskt vatn; 2 mg/l - Sediment; 13.4 mg/l - Jarðvegur; 1.5 mg/kg - STP; 7.2 mg/l - Sjór; 0.2 mg/l - Ósamfelld losun; 1 mg/l - Botnfall (sjór); 1.34 mg/kg

8.2. Váhrifavarnir**Hlífförbúnaður****Viðeigandi verkfræðilegt eftirlit** Tryggið næga loftun. Fylgið öllum starfstengdum váhrifsmörkum fyrir vöruna eða innihaldsefni.**Augn/andlitsvörn** Notið þétt hlífðargleraugu eða andlitshlíf. EN 166**Vörn handa** Notið hlífðarhanska. Velja skal hentugustu hanskana í samráði við birgja/framleiðanda hanskana, sem getur veitt upplýsingar um gegndræpistíma efnisins í hönskunum. Bútýl gúmmí. EN 374**Önnur húð og líkamsvörn** Notið viðeigandi fatnað til þess að koma í veg fyrir líkur á snertingu við húð.**Hlífförbúnaður fyrir öndun** Nota verður öndunargrímur ef loftborin mengun fer yfir ráðlögð váhrifsmörk fyrir starfsfólk. Fjölnota filter, gerð B+E/P3. Respirator with ABEK filter 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 til ljósgulur.
Lykt	Stingandi.
Lyktarmörk	Engar upplýsingar aðgengilegar.
pH	pH (mettuð lausn): <2
Bræðslumark	-13°C
Upphafssuðumark og bil	107.3°C
Blossamark	> 65°C
Uppgufunarhraði	Engar upplýsingar aðgengilegar.
Eldfimi (fast efni, lofttegundir)	Engar upplýsingar aðgengilegar.

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Efri/neðri eldfimi eða sprengimörk	Efri eldfimi-/sprengimörk: 47.6 Lægri eldfimi-/sprengimörk: 14.9
Gufuprýstingur	< 4.4 kPa
Gufupéttni	Engar upplýsingar aðgengilegar.
Eðlismassi	1.195 @ @ 20°C
Leysni	Leysanlegt í vatni.
Deilistuðull	Engar upplýsingar aðgengilegar.
Sjálfskveikjuhitastig	500°C
Niðurbrotshiti	Engar upplýsingar aðgengilegar.
Seigja	1.4 mPa s @ 20°C
Sprengieiginleikar	Engar upplýsingar aðgengilegar.
Oxunareiginleikar	Ekki ákvarðað.

9.2. Aðrar upplýsingar

Aðrar upplýsingar Ekki ákvarðað.

KAFLI 10: Stöðugleiki og hvarfgimi**10.1. Hvarfgimi**

Hvarfgimi Hvarfast við basa og amín sem mynda mikinn hita.

10.2 Efnafraeðilegur stöðugleiki

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

10.3. Möguleiki á hættulegu efnahvarfi

Möguleiki á hættulegum hvörfum Ekki ákvarðað.

10.4. Skilyrði sem ber að varast

Aðstæður sem ber að forðast Geymið ekki við hærri hita en 30°C.

10.5. Ósamrýmanleg efni

Efni sem skal forðast Basar. Amín.

10.6. Hættuleg niðurbrotsefni

Hættuleg niðurbrotsefni Myndefni hitaniðurbrots eða bruna geta innfalið eftirfarandi efni: Koldíoxíð (CO₂). Eitruð gös og gufur.

KAFLI 11: Eiturefnafraeðilegar upplýsingar**11.1. Upplýsingar um eiturefnafraeðileg áhrif****Bráð eitrun - um munn**

ATE um munn (mg/kg) 858,82

Bráð eitrun - við innöndun

ATE innöndun (gufur mg/l) 9,24

Æting/erting húðar

Gögn um dýr Engar upplýsingar aðgengilegar.

Alvarlegur augnskaði / erting

FORMIC ACID >78.5% <=85%

Alvarlegur augnskaði/erting Engar upplýsingar aðgengilegar.

Næming öndunarfæra

Næming öndunarvegjar Engar upplýsingar aðgengilegar.

Næming húðar

Næming húðar Engar upplýsingar aðgengilegar.

Stökkbreytandi áhrif á kímfrumur

Erfðaeiturhrif - í tilraunaglassi Engar upplýsingar aðgengilegar.

Krabbameinsvaldandi áhrif

Krabbameinsvaldandi áhrif Engar upplýsingar aðgengilegar.

Eiturhrif á æxlun

Eitrunaráhrif á æxlun - frjósemi Engar upplýsingar aðgengilegar.

Sértæk eiturhrif á marklíffæri - stök váhrif

STOT-stök váhrif Engar upplýsingar aðgengilegar.

Sértæk eiturhrif á marklíffæri - endurtekin váhrif

STOT-endurtekin váhrif Engar upplýsingar aðgengilegar.

Ásvelgingshætta

Ásvelgingshætta Engar upplýsingar aðgengilegar.

Innöndun Ætandi í öndunarvegi. Eitrað við innöndun.

Inntaka Þessi vara er ætandi. Hættulegt við inntöku.

Snerting við húð Getur valdið alvarlegum efnabruna á húð.

Snerting við augu Ætandi

Eiturefnafræðilegar upplýsingar um innihaldsefni**FORMIC ACID ... %****Bráð eitrun - um munn**

Bráð eitrun um munn (LD₅₀ 730,0 mg/kg)

Dýrategund Rotta

Athugasemdir (um munn LD₅₀) OECD 401

ATE um munn (mg/kg) 730,0

Bráð eitrun - við innöndun

Bráð eitrun við innöndun (LC₅₀ gufur mg/l) 7,85

Dýrategund Rotta

ATE innöndun (gufur mg/l) 7,85

Æting/erting húðar

Gögn um dýr Ætandi á húð. Kanína OECD 404

FORMIC ACID >78.5% <=85%Alvarlegur augnskaði / erting

Alvarlegur augnskaði/erting Gert er ráð fyrir ætingu á augum. Ekki er þörf á prófunum.

Næming öndunarfæra

Næming öndunarvegjar Gögn vantar.

Næming húðar

Næming húðar Ekki næmandi. Buehler próf Naggrís OECD 406

Stökkbreytandi áhrif á kímfurur

Erfðaeiturhrif - í tilraunaglassi Byggt á tiltækum gögnum eru skilyrði flokkunar ekki uppfyllt. Ames próf

Krabbameinsvaldandi áhrif

Krabbameinsvaldandi áhrif Það er ekkert sem bendir til þess að varan geti valdi krabbameini.

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 Gögn vantar.

Sértæk eiturhrif á marklíffæri - endurtekin váhrif

STOT-endurtekin váhrif NOAEC (Áhrifaleysisstyrkur) 0.122 mg/l, Innöndun, Rotta

Ásvelgingshætta

Ásvelgingshætta Á ekki við.

Innöndun Ætandi í öndunarvegi. Eitrað við innöndun.

Inntaka Ætandi Hættulegt við inntöku.

Snerting við húð Mjög ætandi

Snerting við augu Veldur alvarlegum augnskaða.

KAFLI 12: Vistfræðilegar upplýsingar

Visteituráhrif Varan getur haft áhrif á sýrustig (pH) vatns sem getur haft hættuleg áhrif á vatnalífverur.

Vistfræðilegar upplýsingar um innihaldsefni**FORMIC ACID ...%**

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

12.1 Eiturhrif

Eitrun Ekki talið eitrað fiskum.

Vistfræðilegar upplýsingar um innihaldsefni**FORMIC ACID ...%**Bráð eiturhrif í vatni

FORMIC ACID >78.5% <=85%

Bráðu eitrun - fiskur	LC50, 96 klukkutímar: 130 mg/l, Brachydanio rerio (sebrafiskur) OECD 203
Bráð eitrun - hryggleysingjar	EC ₅₀ , 48 klukkutímar: 365 mg/l, Daphnia magna (halafær) OECD 202
Bráð eitrun - vatnablöntur	EC ₅₀ , 72 klukkutímar: 1240 mg/l, Selenastrum capricornutum (vatnaplanta) OECD 201

12.2. Þrávirkni og niðurbrotanleiki

Þrávirkni og niðurbrot Varan er auðlífbrjótanleg.

Vistfræðilegar upplýsingar um innihaldsefni**FORMIC ACID ...%**

Þrávirkni og niðurbrot	Varan er auðlífbrjótanleg.
Líffræðileg súrefnisþörf	86
Þörf fyrir súrefni	348

12.3. Uppsöfnun í lífverum

Möguleiki á uppsöfnun í lífverum Varan inniheldur engin efni sem talin eru safnast upp í náttúrunni.

Deilistuðull Engar upplýsingar aðgengilegar.

Vistfræðilegar upplýsingar um innihaldsefni**FORMIC ACID ...%**

Möguleiki á uppsöfnun í lífverum	Varan inniheldur engin efni sem talin eru safnast upp í náttúrunni.
Deilistuðull	: -2.1 OECD 107

12.4. Hreyfanleiki í jarðvegi

Hreyfanleiki Varan er leysanleg í vatni.

Vistfræðilegar upplýsingar um innihaldsefni**FORMIC ACID ...%**

Hreyfanleiki	Varan er leysanleg í vatni.
Yfirborðsspenna	71.5 mN/m @ 20°C

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.

Vistfræðilegar upplýsingar um innihaldsefni**FORMIC ACID ...%**

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.
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12.6. Önnur skaðleg áhrif

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Önnur skaðleg áhrif Engin þekkt.

Vistfræðilegar upplýsingar um innihaldsefnin**FORMIC ACID ...%**

Önnur skaðleg áhrif Engin þekkt.

KAFLI 13: Förgun**13.1. Aðferðir við meðhöndlun úrgangs**

Almennar upplýsingar Úrgangur er flokkaður sem hættulegur úrgangur.

Losunaraðferðir Gerið ekki gat á né kveikið í, jafnvel þó tomt. 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

UN nr. (ADR/RID) 3412

UN nr. (IMDG) 3412

UN nr. (ICAO) 3412

UN nr. (ADN) 3412

14.2. Rétt UN-sendingarheiti

Rétt heiti (ADR/RID) FORMIC ACID

Rétt heiti (IMDG) FORMIC ACID

Rétt heiti (ICAO) FORMIC ACID

Rétt heiti (ADN) FORMIC ACID

14.3. Hættuflokkur eða -flokkar vegna flutninga

ADR/RID flokkur 8

ADR/RID flokkunarkóði C3

ADR/RID merking 8

IMDG flokkur 8

ICAO flokkun/skipting 8

ADN flokkur 8

Flutningsmerkingar

**14.4 Pökkunarflokkur**

ADR/RID pökkunarhópur II

IMDG pökkunarflokkur II

ADN pökkun II

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ICAO pökkunarflokkur II

14.5. Umhverfshættur

Efni hættulegt umhverfinu / mengar sjó

Nei.

14.6. Sérstakar varúðarráðstafanir fyrir notanda

EMS - skilaboðþjónusta F-A, S-B

ADR flutningsflokkur 2

Neyðarkóði •2X

Hættuflokkunúmer (ADR/RID) 80

Takmörkunarkóði fyrir göng (E)

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

Flutningar í búlk samkvæmt Engra upplýsinga er þörf.

viðauka II af MARPOL 73/78
og IBC kóðanum**KAFLI 15: Upplýsingar varðandi regluverk****15.1. Sértek ákvæði/löggjöf fyrir efnið eða blönduna vegna öryggis, heilbrigðis og umhverfis**

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

FORMIC ACID >78.5% <=85%

Styttingar og skammstafanir sem eru notaðar í öryggisblaðinu	<p>ATE: Matsgildi bráðra eiturhrifa.</p> <p>ADR: Evrópusamningur um millilandaflutninga á hættulegum farmi á vegum</p> <p>ADN: Evrópusamningur um millilandaflutninga á hættulegum farmi á landi og skipgengum vatnaleiðum.</p> <p>CAS: Upplýsingaþjónusta um iðefni.</p> <p>DNEL: Afleidd áhrifaleysismörk.</p> <p>IATA: Alþjóðasamband flugfélaga.</p> <p>IMDG: Alþjóðlegur kóði um siglingu með hættulegan varning.</p> <p>Kow: Oktanól-vatn deilistuðull.</p> <p>LC50: Styrkur sem veldur dauða 50% tilraunadýra.</p> <p>LD50: Skammtur sem veldur dauða 50% tilraunadýra (miðgildisbanaskammtur).</p> <p>PBT: Þrávirk efni sem safnast fyrir í lífverum og eru eitruð.</p> <p>PNEC: Styrkur þar sem engin áhrif eru fyrir sjáanleg.</p> <p>REACH: Reglugerð um skráningu, mat, leyfisveitingu og takmarkanir á kemískum efnum (EB) nr. 1907/2006</p> <p>RID: Reglur um millilandaflutninga á hættulegum farmi með járnbrautum.</p> <p>vPvB: Mjög þrávirk efni sem safnast fyrir í lífverum í miklum mæli.</p> <p>IARC: Alþjóðakrabbameinsrannsóknastofnunin.</p> <p>MARPOL 73/78: Alþjóðasamningur um varnir gegn mengun frá skipum, 1973, með breytingum samvæmt bókun frá 1978.</p> <p>cATpE: Umreiknað matsgildi bráðra eiturhrifa.</p> <p>BCF: Lífbéttistuðull.</p> <p>BOD: Lífræn súrefnisþörf.</p> <p>EC₅₀: 50% af hámarks hrifstyrk.</p> <p>LOAEC: Lægsti styrkur sem sýnir merkjanleg skaðleg áhrif.</p> <p>LOAEL: Lægstu mörk um merkjanleg skaðleg áhrif.</p> <p>NOAEC: Styrkleikamörk um engin merkjanleg, skaðleg áhrif.</p> <p>NOAEL: Mörk um engin merkjanleg, skaðleg áhrif.</p> <p>NOEC: Styrkur sem hefur engin merkjanleg áhrif</p> <p>LOEC: Minnsti styrkur sem hefur merkjanleg áhrif</p> <p>DMEL: Afleidd mörk um lágmarks áhrif.</p>
Flokkunarskammstafanir og upphafsstaða	<p>Bráð eit. = Bráð eitrun</p> <p>Bráð eit. á vatn = Bráð eitrun á vatnaumhverfi</p> <p>Langv. eit. á vatn = Langvinn eitrun á vatnaumhverfi</p>
Athugasemdir við endurskoðun	Athugið: Línur innan við spássíu gefa til kynna marktækar breytingar frá fyrri endurskoðun.
Dagsetning endurskoðunar	14.2.2017
Útgáfunúmer	1.002
Yfirtökudagsetning	7.9.2016
SDS númer	45399
SDS staða	Samþykkt.
Hættusetningar í fullri lengd	<p>H226 Eldfimir vökvi og gufa.</p> <p>H302 Hættulegt við inntöku.</p> <p>H314 Veldur alvarlegum bruna á húð og augnskaða.</p> <p>H318 Veldur alvarlegum augnskaða.</p> <p>H331 Eitrað við innöndun.</p>
Undirskrift	Jitendra Panchal



Exposure scenario Distribution of substance

Identification

Product name	Formic Acid
REACH skráningarnúmer	01-2119491174-37-XXXX
CAS númer	64-18-6
EB númer	200-579-1
ESB skráarnúmer	607-001-00-0
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
Process scope	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.
Main sector	SU3 Industrial uses
Sector of use	SU8 Manufacture of bulk, large-scale chemicals (including petroleum products) SU9 Manufacture of fine chemicals

Environment

Environmental release category	ERC2 Formulation of preparations.
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Worker

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

Control of environmental exposure

Environmental release category	ERC2 Formulation of preparations.
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Distribution of substance

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

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

Control of workers exposure

Process category 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.

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ °C
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 Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.
Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

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

Control of workers exposure

Process category PROC15 Use as laboratory reagent.

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ 20°C
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. Covers skin contact area up to 240 cm².

Distribution of substance

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

3. Exposure estimation (Health 1)

Process category	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.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 4.823 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.508

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 2)

Process category	PROC15 Use as laboratory reagent.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 1.929 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.203

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

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario

Formulation & (re)packing of substances and mixtures

Identification

Product name	Formic Acid
REACH skráningarnúmer	01-2119491174-37-XXXX
CAS númer	64-18-6
EB númer	200-579-1
ESB skráarnúmer	607-001-00-0
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
Process scope	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging

Environment

Environmental release category	ERC2 Formulation of preparations.
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Worker

Formulation & (re)packing of substances and mixtures

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)

Control of environmental exposure

Environmental release category	ERC2 Formulation of preparations.
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As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

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

Control of workers exposure

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>
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Product characteristics

Physical state	Liquid
Vapour pressure	42.7 hPa @ 20°C
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 both hands. Covers skin contact area up to 480 cm ² .
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Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures	Provide extract ventilation to points where emissions occur.
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Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented.
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Formulation & (re)packing of substances and mixtures

Risk management measures

Use suitable eye protection and gloves.

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

Control of workers exposure

Process category PROC15 Use as laboratory reagent.

Product characteristics

Physical state Liquid

Vapour pressure 42.7 hPa @ 20°C

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. Covers skin contact area up to 240 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

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

Product characteristics

Physical state Liquid

Vapour pressure 42.7 hPa @ 20°C

Concentration details Nær yfir styrkleika allt að 80 %.

Frequency and duration of use

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

Formulation & (re)packing of substances and mixtures

Human factors not influenced by risk management

Potentially exposed body parts Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

2. Conditions of use affecting exposure (Workers - Health 4)

Control of workers exposure

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

Product characteristics

Physical state Liquid

Vapour pressure 42.7 hPa @ 20°C

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 both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

3. Exposure estimation (Health 1)

Formulation & (re)packing of substances and mixtures

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.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 4.822 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.508 Worker - contact with eyes The use is assessed to be safe. Worker - dermal The use is assessed to be safe. Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 2)

Process category	PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 1.929 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.203 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 3)

Process category	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.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 7.717 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.812 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 3)

For scaling see <http://www.ecetoc.org/tra>

Formulation & (re)packing of substances and mixtures

3. Exposure estimation (Health 4)

Process category	PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 2.894 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.305 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario Use as an intermediate

Identification

Product name	Formic Acid
REACH skráningarnúmer	01-2119491174-37-XXXX
CAS númer	64-18-6
EB númer	200-579-1
ESB skráarnúmer	607-001-00-0
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
Process scope	Use of substance as an intermediate (not related to Strictly Controlled Conditions). Includes recycling/recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/berth, road/rail car and bulk container).
Main sector	SU3 Industrial uses
Sector of use	SU8 Manufacture of bulk, large-scale chemicals (including petroleum products)

Environment

Environmental release category	ERC6a Industrial use resulting in manufacture of another substance (use of intermediates).
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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. PROC15 Use as laboratory reagent.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Use as an intermediate

Environmental release category ERC6a Industrial use resulting in manufacture of another substance (use of intermediates).

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

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

Control of workers exposure

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.

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ 20°C
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 both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.
Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

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

Control of workers exposure

Process category 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.

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ 20°C
Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

Use as an intermediate

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

Human factors not influenced by risk management

Potentially exposed body parts Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

If above technical/organisational control measures are not feasible, then adopt following PPE: notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%): 95

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Process category PROC15 Use as laboratory reagent.

Product characteristics

Physical state Liquid

Vapour pressure 42.7 hPa @ 20°C

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. Covers skin contact area up to 240 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

3. Exposure estimation (Health 1)

Use as an intermediate

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.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 4.822 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.508 : Exposure , DNEL , RCR Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

3. Exposure estimation (Health 2)

Process category	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.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 4.823 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.508 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 3)

Process category	PROC15 Use as laboratory reagent.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 1.929 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.203 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 3)

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario Use in Coatings

Identification

Product name	Formic Acid
REACH skráningarnúmer	01-2119491174-37-XXXX
CAS númer	64-18-6
EB númer	200-579-1
ESB skráarnúmer	607-001-00-0
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 Coatings
Process scope	Covers the use in coatings (paints, inks, adhesives, etc.), including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.
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	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. PROC10 Roller application or brushing of adhesive and other coating. PROC13 Treatment of articles by dipping and pouring. PROC15 Use as laboratory reagent.

Use in Coatings

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

Control of environmental exposure

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

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

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

Control of workers exposure

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).

Product characteristics

Physical state Liquid

Vapour pressure 42.7 hPa @ 20°C

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). Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).
 notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%): 95
 , or:
 Staðbundin loftræsting útblásturs – skilvirkni upp á a.m.k. [%]: 95

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

Use in Coatings

Control of workers exposure

Process category PROC7 Spraying in industrial settings and applications.
 PROC10 Roller application or brushing of adhesive and other coating.
 PROC13 Treatment of articles by dipping and pouring.

Product characteristics

Physical state Liquid

Vapour pressure 42.7 hPa @ 20°C

Concentration details PROC7 Spraying in industrial settings and applications. Nær yfir styrkleika allt að 30 %.
 PROC10 Roller application or brushing of adhesive and other coating. PROC13 Treatment of articles by dipping and pouring. 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 PROC7 Spraying in industrial settings and applications. Hands and forearms. Covers skin contact area up to 1500 cm².
 PROC10 Roller application or brushing of adhesive and other coating. Palm of both hands. Covers skin contact area up to 480 cm².
 PROC13 Treatment of articles by dipping and pouring. Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.
 notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%): 95
 , or:
 Staðbundin loftræsting útblásturs – skilvirkni upp á a.m.k. [%]: 95

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Process category 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.

Product characteristics

Physical state Liquid

Vapour pressure 42.7 hPa @ 20°C

Concentration details Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

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

Use in Coatings

Human factors not influenced by risk management

Potentially exposed body parts Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

2. Conditions of use affecting exposure (Workers - Health 4)

Control of workers exposure

Process category PROC15 Use as laboratory reagent.

Product characteristics

Physical state Liquid

Vapour pressure 42.7 hPa @ 20°C

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. Covers skin contact area up to 240 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

3. Exposure estimation (Health 1)

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).

Use in Coatings

Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	<p>Worker - contact with eyes Qualitative approach used to conclude safe use.</p> <p>Worker - dermal Qualitative approach used to conclude safe use.</p> <p>PROC1 Use in closed process, no likelihood of exposure. Worker - inhalation, long-term - local and systemic: Exposure 0.019 mg/m³, DNEL 9.5 mg/m³, RCR 0.002</p> <p>PROC2 Use in closed, continuous process with occasional controlled exposure. Worker - inhalation, long-term - local and systemic: Exposure 1.929 mg/m³, DNEL 9.5 mg/m³, RCR 0.203</p> <p>PROC3 Use in closed batch process (synthesis or formulation). Worker - inhalation, long-term - local and systemic: Exposure 4.822 mg/m³, DNEL 9.5 mg/m³, RCR 0.508</p> <p>PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. Worker - inhalation, long-term - local and systemic: Exposure 3.858 mg/m³, DNEL 9.5 mg/m³, RCR 0.406</p> <p>PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). Worker - inhalation, long-term - local and systemic: Exposure 4.823 mg/m³, DNEL 9.5 mg/m³, RCR 0.508</p>

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 2)

Process category	<p>PROC7 Spraying in industrial settings and applications.</p> <p>PROC10 Roller application or brushing of adhesive and other coating.</p> <p>PROC13 Treatment of articles by dipping and pouring.</p>
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	<p>Worker - contact with eyes Qualitative approach used to conclude safe use.</p> <p>Worker - dermal Qualitative approach used to conclude safe use.</p> <p>PROC7 Spraying in industrial settings and applications. Worker - inhalation, long-term - local and systemic: Exposure 7.234 mg/m³, DNEL 9.5 mg/m³, RCR 0.762</p> <p>PROC10 Roller application or brushing of adhesive and other coating.</p> <p>PROC13 Treatment of articles by dipping and pouring. Worker - inhalation, long-term - local and systemic: Exposure 4.823 mg/m³, DNEL 9.5 mg/m³, RCR 0.508</p>

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 3)

Process category	<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>
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Use in Coatings

Exposure	<p>Worker - contact with eyes Qualitative approach used to conclude safe use.</p> <p>Worker - dermal Qualitative approach used to conclude safe use.</p> <p>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 4.823 mg/m³, DNEL 9.5 mg/m³, RCR 0.508</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 2.894 mg/m³, DNEL 9.5 mg/m³, RCR 0.305</p>
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4. Guidance to check compliance with the exposure scenario (Health 3)

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 4)

Process category	PROC15 Use as laboratory reagent.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	<p>Worker - contact with eyes Qualitative approach used to conclude safe use.</p> <p>Worker - dermal Qualitative approach used to conclude safe use.</p> <p>Worker - inhalation, long-term - local and systemic: Exposure 1.929 mg/m³, DNEL 9.5 mg/m³, RCR 0.203</p>

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

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario Use in Cleaning Agents

Identification

Product name	Formic Acid
REACH skráningarnúmer	01-2119491174-37-XXXX
CAS númer	64-18-6
EB númer	200-579-1
ESB skráarnúmer	607-001-00-0
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 Cleaning Agents
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>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>PROC10 Roller application or brushing of adhesive and other coating.</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC19 Hand-mixing with intimate contact and only PPE available.</p>
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

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

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

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

Control of workers exposure

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.

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ 20°C
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 both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.
Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

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

Control of workers exposure

Process category PROC7 Spraying in industrial settings and applications.

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ 20°C
Concentration details Nær yfir styrkleika allt að 30 %.

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 Hands and forearms. Covers skin contact area up to 1500 cm².

Use in Cleaning Agents

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented.
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Risk management measures

Use suitable eye protection and gloves.
 notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%): 95
 , or:
 Staðbundin loftræsting útblásturs – skilvirkni upp á a.m.k. [%]: 95

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Process category	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.
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Product characteristics

Physical state	Liquid
Vapour pressure	42.7 hPa @ 20°C
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	Both hands. Covers skin contact area up to 960 cm ² .
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Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures	Provide extract ventilation to points where emissions occur.
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Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented.
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Risk management measures

Use suitable eye protection and gloves.
 notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%): 95
 , or:
 Staðbundin loftræsting útblásturs – skilvirkni upp á a.m.k. [%]: 95

2. Conditions of use affecting exposure (Workers - Health 4)

Control of workers exposure

Use in Cleaning Agents

Process category PROC10 Roller application or brushing of adhesive and other coating.
 PROC13 Treatment of articles by dipping and pouring.
 PROC19 Hand-mixing with intimate contact and only PPE available.

Product characteristics

Physical state Liquid

Vapour pressure 42.7 hPa @ 20°C

Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

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 Both hands and main part of the arms. Covers skin contact area up to 1980 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures PROC19 Hand-mixing with intimate contact and only PPE available. Limit the substance content in the product to 85%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%): 95

, or:

Staðbundin loftræsting útblásturs – skilvirkni upp á a.m.k. [%]: 95

3. Exposure estimation (Health 1)

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.

Assessment method ECETOC TRA v2.0 Worker; modified version

Exposure Worker - inhalation, long-term - local and systemic: Exposure 4.822 mg/m³, DNEL 9.5 mg/m³, RCR 0.508
 Worker - contact with eyes
 Qualitative approach used to conclude safe use.
 Worker - dermal
 Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 2)

Use in Cleaning Agents

Process category	PROC7 Spraying in industrial settings and applications.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 7.234 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.762 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 3)

Process category	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.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 4.823 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.508 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 3)

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 4)

Process category	PROC10 Roller application or brushing of adhesive and other coating. PROC13 Treatment of articles by dipping and pouring.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 4.823 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.508 Qualitative approach used to conclude safe use. Worker - contact with eyes Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario Use in Cleaning Agents - Professional

Identification

Product name	Formic Acid
REACH skráningarnúmer	01-2119491174-37-XXXX
CAS númer	64-18-6
EB númer	200-579-1
ESB skráarnúmer	607-001-00-0
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 Cleaning Agents - Professional
Process scope	Covers the use as a component of cleaning products, including pouring/unloading from drums or containers and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand).
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC8a Wide dispersive indoor use of processing aids in open systems. ERC8d Wide dispersive outdoor use of processing aids in open systems.
<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. 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. PROC19 Hand-mixing with intimate contact and only PPE available.

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

Use in Cleaning Agents - Professional

Control of environmental exposure

Environmental release category	ERC8a Wide dispersive indoor use of processing aids in open systems. ERC8d Wide dispersive outdoor use of processing aids in open systems.
	As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

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

Control of workers exposure

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.
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Product characteristics

Physical state	Liquid
Vapour pressure	42.7 hPa @ 20°C
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 both hands. Covers skin contact area up to 480 cm ² .
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Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures	Provide extract ventilation to points where emissions occur.
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Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented.
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Risk management measures

Use suitable eye protection and gloves.
notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%): 95
, or:
Staðbundin loftræsting útblásturs – skilvirkni upp á a.m.k. [%]: 95

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

Control of workers exposure

Process category	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.
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Product characteristics

Physical state	Liquid
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Use in Cleaning Agents - Professional

Vapour pressure 42 hPa @ 20°C

Concentration details Nær yfir styrkleika allt að 80 %.

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 both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.
notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%): 95

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Process category PROC11 Spraying outside industrial settings and/or applications.

Product characteristics

Physical state Liquid

Vapour pressure 42.7 hPa @ 20°C

Concentration details Nær yfir styrkleika allt að 15 %.

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 Hands and forearms. Covers skin contact area up to 1500 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.
notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%): 95
, or:
Staðbundin loftræsting útblásturs – skilvirkni upp á a.m.k. [%]: 95

2. Conditions of use affecting exposure (Workers - Health 4)

Use in Cleaning Agents - Professional

Control of workers exposure

Process category PROC10 Roller application or brushing of adhesive and other coating.
PROC13 Treatment of articles by dipping and pouring.
PROC19 Hand-mixing with intimate contact and only PPE available.

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ 20°C
Concentration details Nær yfir styrkleika allt að 50 %. Unless otherwise stated.

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 Both hands and main part of the arms. Covers skin contact area up to 1980 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.
Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures PROC19 Hand-mixing with intimate contact and only PPE available. Limit the substance content in the product to 85%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented. PROC19 Hand-mixing with intimate contact and only PPE available. Avoid carrying out activities involving exposure for more than 1 hour.

Risk management measures

Use suitable eye protection and gloves.
notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%): 95
, or:
Staðbundin loftræsting útblásturs – skilvirkni upp á a.m.k. [%]: 95

3. Exposure estimation (Health 1)

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.

Assessment method ECETOC TRA v2.0 Worker; modified version

Exposure Worker - inhalation, long-term - local and systemic: Exposure 7.717 mg/m³, DNEL 9.5 mg/m³, RCR 0.812
Worker - contact with eyes
Qualitative approach used to conclude safe use.
Worker - dermal
Qualitative approach used to conclude safe use.

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

Use in Cleaning Agents - Professional

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 2)

Process category	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.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 7.717 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.812 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 3)

Process category	PROC11 Spraying outside industrial settings and/or applications.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 7.234 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.762 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 3)

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 4)

Process category	PROC10 Roller application or brushing of adhesive and other coating. PROC13 Treatment of articles by dipping and pouring.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 4.823 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.508 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario Use in Cleaning Agents - Consumer

Identification

Product name	Formic Acid
REACH skráningarnúmer	01-2119491174-37-XXXX
CAS númer	64-18-6
EB númer	200-579-1
ESB skráarnúmer	607-001-00-0
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 Cleaning Agents - Consumer
Product category	PC35 Washing and cleaning products (including solvent-based products).
Main sector	SU21 Consumer uses

Environment

Environmental release category	ERC8a Wide dispersive indoor use of processing aids in open systems. ERC8d Wide dispersive outdoor use of processing aids in open systems.
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2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Control of environmental exposure (Non-industrial)

Environmental release category	ERC8a Wide dispersive indoor use of processing aids in open systems. ERC8d Wide dispersive outdoor use of processing aids in open systems.
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As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

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

Product characteristics

Physical state	Liquid
Vapour pressure	42.7 hPa @ 20°C
Concentration details	Nær yfir styrkleika allt að 2 %.

Amounts used

Use in Cleaning Agents - Consumer

Amount per use: 0.025 kg

Frequency and duration of use

Application duration: 20 mínútur

Human factors not influenced by risk management

Potentially exposed body parts Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting Non-industrial exposure

Setting Indoor.

Temperature Assumes activities and processes are carried out at a temperature of 23°C.

Room size 58 m³

Ventilation rate Covers use under typical household ventilation.

Other given operational conditions affecting Non-industrial exposure

Consumer information Avoid direct eye contact with product, also via contamination on hands.

3. Exposure estimation (Health 1)

Assessment method ConsExpo v4.1

Exposure Consumer - inhalation, long-term - local and systemic: Exposure 0.6 mg/m³, DNEL 3 mg/m³, RCR 0.06
Consumer - inhalation, short-term - local and systemic: Exposure 3.7 mg/m³, DNEL 9.5 mg/m³, RCR 0.195



Exposure scenario Use in laboratories - Industrial

Identification

Product name	Formic Acid
REACH skráningarnúmer	01-2119491174-37-XXXX
CAS númer	64-18-6
EB númer	200-579-1
ESB skráarnúmer	607-001-00-0
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
Process scope	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.
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	PROC15 Use as laboratory reagent.

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

Control of environmental exposure

Environmental release category	ERC4 Industrial use of processing aids in processes and products, not becoming part of articles. As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.
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2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

Process category	PROC15 Use as laboratory reagent.
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Product characteristics

Use in laboratories - Industrial

Physical state	Liquid
Vapour pressure	42.7 hPa @ 20°C
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. Covers skin contact area up to 240 cm ² .
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Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

3. Exposure estimation (Health 1)

Process category	PROC15 Use as laboratory reagent.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 1.929 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.203 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario Use in laboratories - Professional

Identification

Product name	Formic acid
REACH skráningarnúmer	01-2119491174-37-XXXX
CAS númer	64-18-6
EB númer	200-579-1
ESB skráarnúmer	607-001-00-0
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
Process scope	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.
Sector of use	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	PROC15 Use as laboratory reagent.

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

Control of workers exposure

Process category	PROC15 Use as laboratory reagent.
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Product characteristics

Physical state	Liquid
Vapour pressure	42.7 hPa @ 20°C
Concentration details	Nær yfir styrkleika allt að 100 %.

Frequency and duration of use

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

Use in laboratories - Professional

Human factors not influenced by risk management

Potentially exposed body parts Palm of one hand. Covers skin contact area up to 240 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

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

Control of environmental exposure (Non-industrial)

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

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

3. Exposure estimation (Health 1)

Process category PROC15 Use as laboratory reagent.

Assessment method ECETOC TRA v2.0 Worker; modified version

Exposure Worker - inhalation, long-term - local and systemic: Exposure 3.858 mg/m³, DNEL 9.5 mg/m³, RCR 0.406
 Worker - contact with eyes
 Qualitative approach used to conclude safe use.
 Worker - dermal
 Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario

Polymer production, Production of resins

Identification

Product name	Formic Acid
REACH skráningarnúmer	01-2119491174-37-XXXX
CAS númer	64-18-6
EB númer	200-579-1
ESB skráarnúmer	607-001-00-0
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 production, Production of resins
Process scope	Manufacture of polymers from monomers in continuous and batch processes. Includes production, recycling and recovery, degassing, discharging, reactor maintenance and immediate polymer product formation (i.e. compounding, pelletisation, product off-gassing).
Main sector	SU3 Industrial uses
Sector of use	SU12 Manufacture of plastics products, including compounding and conversion

Environment

Environmental release category	ERC6c Industrial use of monomers for manufacture of thermoplastics.
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Worker

Polymer production, Production of resins

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

Control of environmental exposure

Environmental release category ERC6c Industrial use of monomers for manufacture of thermoplastics.

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

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

Control of workers exposure

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.

Product characteristics

Physical state Liquid

Vapour pressure 42.7 hPa @ 20°C

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 both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Polymer production, Production of resins

Use suitable eye protection and gloves.

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

Control of workers exposure

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

Product characteristics

Physical state Liquid

Vapour pressure 42.7 hPa @ 20°C

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 both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%): 95

, or:

Staðbundin loftræsting útblásturs – skilvirkni upp á a.m.k. [%]: 95

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Process category 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.

Product characteristics

Physical state Liquid

Vapour pressure 42.7 hPa @ 20°C

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 Both hands. Covers skin contact area up to 960 cm².

Polymer production, Production of resins

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%):

, or:

Staðbundin loftræsting útblásturs – skilvirkni upp á a.m.k. [%]: 95

2. Conditions of use affecting exposure (Workers - Health 4)

Control of workers exposure

Process category 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.

Product characteristics

Physical state Liquid

Vapour pressure 42.7 hPa @ 20°C

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 both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%): 95

3. Exposure estimation (Health 1)

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.

Polymer production, Production of resins

Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 4.822 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.508 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 2)

Process category	PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 4.823 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.508 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 3)

Process category	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.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 4 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.508 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 3)

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 4)

Process category	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.
Assessment method	ECETOC TRA v2.0 Worker; modified version

Polymer production, Production of resins

Exposure

Worker - inhalation, long-term - local and systemic: Exposure 4.8230 mg/m³, DNEL 9.5 mg/m³, RCR 0.508

Worker - contact with eyes

Qualitative approach used to conclude safe use.

Worker - dermal

Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario Polymer processing

Identification

Product name	Formic Acid
REACH skráningarnúmer	01-2119491174-37-XXXX
CAS númer	64-18-6
EB númer	200-579-1
ESB skráarnúmer	607-001-00-0
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
Process scope	Processing of formulated polymers, including material transfers, moulding and forming activities, material reworks and associated maintenance.
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging
<u>Environment</u>	
Environmental release category	ERC6d Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers.
<u>Worker</u>	

Polymer processing

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>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>PROC0 Other process or activity.</p> <p>PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.</p>
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Environmental release category	<p>ERC6d Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers.</p> <p>As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.</p>
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2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

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>
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Product characteristics

Physical state	Liquid
Vapour pressure	42.7 hPa @ 20°C
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 both hands. Covers skin contact area up to 480 cm ² .
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Other given operational conditions affecting workers exposure

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

Technical protective measures	Provide extract ventilation to points where emissions occur.
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Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented.
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Polymer processing

Risk management measures

Use suitable eye protection and gloves.

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

Control of workers exposure

Process category 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.

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ 20°C
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 Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.
Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

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

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ 20°C
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

Polymer processing

Potentially exposed body parts Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

2. Conditions of use affecting exposure (Workers - Health 4)

Control of workers exposure

Process category 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.

Product characteristics

Physical state Liquid

Vapour pressure 42.7 hPa @ 20°C

Concentration details Nær yfir styrkleika allt að 80 %.

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 both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

3. Exposure estimation (Health 1)

Polymer processing

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.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 4.822 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.508 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 2)

Process category	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.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 7.717 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.812 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 3)

Process category	PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 2.894 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.305 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 3)

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 4)

Polymer processing

Process category	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.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 7.717 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.812 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario Polymer processing - Professional

Identification

Product name	Formic Acid
REACH skráningarnúmer	01-2119491174-37-XXXX
CAS númer	64-18-6
EB númer	200-579-1
ESB skráarnúmer	607-001-00-0
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
Process scope	Processing of formulated polymers, including material transfers, moulding and forming activities, material reworks and associated maintenance.
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC8a Wide dispersive indoor use of processing aids in open systems. ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix. ERC8d Wide dispersive outdoor use of processing aids in open systems. ERC8f Wide dispersive outdoor use resulting in inclusion into or onto a matrix.
<u>Worker</u>	
Process category	PROC1 Use in closed process, no likelihood of exposure. 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. 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.

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

Control of environmental exposure

Polymer processing - Professional

Environmental release category

ERC8a Wide dispersive indoor use of processing aids in open systems.
 ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix.
 ERC8d Wide dispersive outdoor use of processing aids in open systems.
 ERC8f Wide dispersive outdoor use resulting in inclusion into or onto a matrix.

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

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

Control of workers exposure

Process category PROC1 Use in closed process, no likelihood of exposure.
 PROC2 Use in closed, continuous process with occasional controlled exposure.

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ 20°C
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 both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

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

Technical protective measures Handle substance within a closed system. Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

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

Control of workers exposure

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

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ 20°C
Concentration details Nær yfir styrkleika allt að 20 %.

Frequency and duration of use

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

Human factors not influenced by risk management

Polymer processing - Professional

Potentially exposed body parts Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur. Efficiency of at least 80%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

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

Product characteristics

Physical state Liquid

Vapour pressure 42.7 hPa @ 20°C

Concentration details Nær yfir styrkleika allt að 80 %.

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 both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur. Efficiency of at least 90%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

2. Conditions of use affecting exposure (Workers - Health 4)

Control of workers exposure

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

Product characteristics

Polymer processing - Professional

Physical state	Liquid
Vapour pressure	42.7 hPa @ 20°C
Concentration details	Nær yfir styrkleika allt að 20 %.

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 both hands. Covers skin contact area up to 480 cm ² .
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Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur. Efficiency of at least 80%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

3. Exposure estimation (Health 1)

Process category	PROC1 Use in closed process, no likelihood of exposure. PROC2 Use in closed, continuous process with occasional controlled exposure.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 7.717 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.812 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 2)

Process category	PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 7.717 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.812 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

Polymer processing - Professional

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 3)

Process category	PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 7.717 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.812 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 3)

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 4)

Process category	PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 7.717 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.812 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario Use as a Process chemical

Identification

Product name	Formic Acid
REACH skráningarnúmer	01-2119491174-37-XXXX
CAS númer	64-18-6
EB númer	200-579-1
ESB skráarnúmer	607-001-00-0
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 a Process chemical
Process scope	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.
Main sector	SU3 Industrial uses
Sector of use	SU5 Manufacture of textiles, leather, fur SU10 Formulation [mixing] of preparations and/or re-packaging

Environment

Environmental release category	ERC2 Formulation of preparations. ERC4 Industrial use of processing aids in processes and products, not becoming part of articles. ERC5 Industrial use resulting in inclusion into or onto a matrix. ERC6b Industrial use of reactive processing aids.
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Worker

Use as a Process chemical

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>PROC6 Calendering operations.</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>PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.</p> <p>PROC15 Use as laboratory reagent.</p> <p>PROC19 Hand-mixing with intimate contact and only PPE available.</p>
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Environmental release category	<p>ERC2 Formulation of preparations.</p> <p>ERC4 Industrial use of processing aids in processes and products, not becoming part of articles.</p> <p>ERC5 Industrial use resulting in inclusion into or onto a matrix.</p> <p>ERC6b Industrial use of reactive processing aids.</p> <p>As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.</p>
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2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

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>
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Product characteristics

Physical state	Liquid
Vapour pressure	42.7 hPa @ 20°C
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 both hands. Covers skin contact area up to 480 cm ² .
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Other given operational conditions affecting workers exposure

Setting	Indoor.
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Use as a Process chemical

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur. Efficiency of at least 90%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

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

Control of workers exposure

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

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ 20°C
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 Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.
Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur. Non-dedicated facility Efficiency of at least 90%. Dedicated facility Efficiency of at least 97%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Process category PROC7 Spraying in industrial settings and applications.

Product characteristics

Use as a Process chemical

Physical state	Liquid
Vapour pressure	42.7 hPa @ 20°C
Concentration details	Nær yfir styrkleika allt að 30 %.

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	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.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur. Efficiency of at least 95%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.
 notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%): 95
 , or:
 Staðbundin loftræsting útblásturs – skilvirkni upp á a.m.k. [%]: 95

2. Conditions of use affecting exposure (Workers - Health 4)

Control of workers exposure

Process category	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. PROC19 Hand-mixing with intimate contact and only PPE available.
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Product characteristics

Physical state	Liquid
Vapour pressure	42.7 hPa @ 20°C
Concentration details	Nær yfir styrkleika allt að 100 %. Unless otherwise stated.

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	Both hands. Covers skin contact area up to 960 cm ² . PROC19 Hand-mixing with intimate contact and only PPE available. Both hands and main part of the arms. Covers skin contact area up to 1980 cm ² .
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Other given operational conditions affecting workers exposure

Use as a Process chemical

Setting	Indoor.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur. Efficiency of at least 90%.
PROC19 Hand-mixing with intimate contact and only PPE available. Limit the substance content in the product to 2.5%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.
notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%): 95
, or:
Staðbundin loftræsting útblásturs – skilvirkni upp á a.m.k. [%]: 95

3. Exposure estimation (Health 1)

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.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 4.822 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.508 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 2)

Process category	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.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 7.717 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.812 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>

Use as a Process chemical

3. Exposure estimation (Health 3)

Process category	PROC7 Spraying in industrial settings and applications.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - dermal, long-term - local and systemic: Exposure 7.234 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.762 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 3)

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 4)

Process category	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.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	: Exposure 7.717 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.812 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use.

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

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario

Use as a Process Chemical - Professional

Identification

Product name	Formic Acid
REACH skráningarnúmer	01-2119491174-37-XXXX
CAS númer	64-18-6
EB númer	200-579-1
ESB skráarnúmer	607-001-00-0
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 a Process Chemical - Professional
Process scope	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix. ERC8d Wide dispersive outdoor use of processing aids in open systems. ERC8f Wide dispersive outdoor use resulting in inclusion into or onto a matrix. ERC10a Wide dispersive outdoor use of long-life articles and materials with low release. ERC11a Wide dispersive indoor use of long-life articles and materials with low release. As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

Worker

Use as a Process Chemical - Professional

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>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>PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.</p> <p>PROC15 Use as laboratory reagent.</p> <p>PROC19 Hand-mixing with intimate contact and only PPE available.</p>
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Environmental release category	<p>ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix.</p> <p>ERC8d Wide dispersive outdoor use of processing aids in open systems.</p> <p>ERC8f Wide dispersive outdoor use resulting in inclusion into or onto a matrix.</p> <p>ERC10a Wide dispersive outdoor use of long-life articles and materials with low release.</p> <p>ERC11a Wide dispersive indoor use of long-life articles and materials with low release.</p>
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2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

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>
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Product characteristics

Physical state	Liquid
Vapour pressure	42.7 hPa @ 20°C
Concentration details	Nær yfir styrkleika allt að 100 %. Unless otherwise stated.

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 both hands. Covers skin contact area up to 480 cm ² .
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Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Staðbundin loftræsting útblásturs – skilvirkni upp á a.m.k. [%]: 80

Use as a Process Chemical - Professional

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

Technical protective measures Handle substance within a closed system. Provide extract ventilation to points where emissions occur. PROC3 Use in closed batch process (synthesis or formulation). Limit the substance content in the mixture to 80%. PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. Limit the substance content in the mixture to 40%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

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

Control of workers exposure

Process category 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.
 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).

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ 20°C
Concentration details Nær yfir styrkleika allt að 20 %. Non-dedicated facility Nær yfir styrkleika allt að 80 %.
 Dedicated facility

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 Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.
Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Use as a Process Chemical - Professional

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

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ 20°C
Concentration details Nær yfir styrkleika allt að 20 %. Unless otherwise stated.

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 Both hands. Covers skin contact area up to 960 cm². PROC19 Hand-mixing with intimate contact and only PPE available. Both hands and main part of the arms. Covers skin contact area up to 1980 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.
Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur. PROC10 Roller application or brushing of adhesive and other coating. Limit the substance content in the product to 25%. PROC19 Hand-mixing with intimate contact and only PPE available. Limit the substance content in the product to 2.5%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.
 PROC10 Roller application or brushing of adhesive and other coating.
 notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%): 95
 , or:
 Staðbundin loftræsting útblásturs – skilvirkni upp á a.m.k. [%]: 95

2. Conditions of use affecting exposure (Workers - Health 4)

Control of workers exposure

Process category PROC11 Spraying outside industrial settings and/or applications.

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ 20°C
Concentration details Nær yfir styrkleika allt að 80 %.

Frequency and duration of use

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

Human factors not influenced by risk management

Use as a Process Chemical - Professional

Potentially exposed body parts Hands and forearms. Covers skin contact area up to 1500 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

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

Technical protective measures Provide extract ventilation to points where emissions occur. Efficiency of at least 80%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Use suitable eye protection and gloves.

notaðu öndunargrímu sem veitir lágmarksvirkni upp á (%): 95

3. Exposure estimation (Health 1)

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.

Assessment method ECETOC TRA v2.0 Worker; modified version

Exposure Worker - inhalation, long-term - local and systemic: Exposure 7.717 mg/m³, DNEL 9.5 mg/m³, RCR 0.812
 Worker - contact with eyes
 Qualitative approach used to conclude safe use.
 Worker - dermal
 Qualitative approach used to conclude safe use.
 Worst case assumption

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 2)

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

Assessment method ECETOC TRA v2.0 Worker; modified version

Exposure Worker - inhalation, long-term - local and systemic: Exposure 7.717 mg/m³, DNEL 9.5 mg/m³, RCR 0.812
 Worker - contact with eyes
 Qualitative approach used to conclude safe use.
 Worker - dermal
 Qualitative approach used to conclude safe use.

Use as a Process Chemical - Professional

Worst case assumption

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

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 3)

Process category	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.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 7.717 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.812 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use. Worst case assumption

4. Guidance to check compliance with the exposure scenario (Health 3)

For scaling see <http://www.ecetoc.org/tra>

3. Exposure estimation (Health 4)

Process category	PROC11 Spraying outside industrial settings and/or applications.
Assessment method	ECETOC TRA v2.0 Worker; modified version
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 7.717 mg/m ³ , DNEL 9.5 mg/m ³ , RCR 0.812 Worker - contact with eyes Qualitative approach used to conclude safe use. Worker - dermal Qualitative approach used to conclude safe use. Worst case assumption

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

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario Use as a Process Chemical - Consumer

Identification

Product name	Formic Acid
REACH skráningarnúmer	01-2119491174-37-XXXX
CAS númer	64-18-6
EB númer	200-579-1
ESB skráarnúmer	607-001-00-0
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 a Process Chemical - Consumer
Product category	PC23 Leather tanning, dye, finishing, impregnation and care products. PC32 Polymer preparations and compounds. PC34 Textile dyes, finishing and impregnating products, including bleaches and other processing aids.
Main sector	SU21 Consumer uses
<u>Environment</u>	
Environmental release category	ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix. ERC8d Wide dispersive outdoor use of processing aids in open systems. ERC8f Wide dispersive outdoor use resulting in inclusion into or onto a matrix. ERC10a Wide dispersive outdoor use of long-life articles and materials with low release. ERC11a Wide dispersive indoor use of long-life articles and materials with low release.

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

Control of environmental exposure (Non-industrial)

Environmental release category	ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix. ERC8d Wide dispersive outdoor use of processing aids in open systems. ERC8f Wide dispersive outdoor use resulting in inclusion into or onto a matrix. ERC10a Wide dispersive outdoor use of long-life articles and materials with low release. ERC11a Wide dispersive indoor use of long-life articles and materials with low release.
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As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

Use as a Process Chemical - Consumer

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

Control of Non-industrial exposure

Process category PC23 Leather tanning, dye, finishing, impregnation and care products.
PC34 Textile dyes, finishing and impregnating products, including bleaches and other processing aids.

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ 20°C
Concentration details Nær yfir styrkleika allt að 2 %.

Amounts used

Amount per use: 0.045 kg

Frequency and duration of use

Covers weekly exposure up to 4klukkuþímar
Application duration: 3 mínútur

Human factors not influenced by risk management

Potentially exposed body parts Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting Non-industrial exposure

Setting Indoor.
Temperature Assumes activities are at ambient temperature (unless stated differently).
Room size 58 m³
Ventilation rate Covers use under typical household ventilation.

Other given operational conditions affecting Non-industrial exposure

Exposure route Inhalation

2. Conditions of use affecting exposure (Non-industrial - Health 2)

Control of Non-industrial exposure

Process category PC32 Polymer preparations and compounds.

Product characteristics

Physical state Liquid
Vapour pressure 42.7 hPa @ 20°C
Concentration details Nær yfir styrkleika allt að 2 %.

Amounts used

Amount per use: 0.025 kg

Frequency and duration of use

Covers weekly exposure up to 4klukkuþímar
Application duration: 20 mínútur

Human factors not influenced by risk management

Use as a Process Chemical - Consumer

Potentially exposed body parts Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting Non-industrial exposure

Setting Indoor.
Temperature Assumes activities are at room temperature.
Room size 58 m³
Ventilation rate Covers use under typical household ventilation.

Other given operational conditions affecting Non-industrial exposure

Exposure route Inhalation Dermal

3. Exposure estimation (Health 1)

Process category PC23 Leather tanning, dye, finishing, impregnation and care products.
 PC34 Textile dyes, finishing and impregnating products, including bleaches and other processing aids.

Assessment method ConsExpo v4.1

Exposure Consumer - inhalation, long-term - local and systemic: Exposure 0.004 mg/m³, DNEL 3 mg/m³, RCR 0.0004
 Consumer - inhalation, short-term - local and systemic: Exposure 0.09 mg/m³, DNEL 9.5 mg/m³, RCR 0.005

3. Exposure estimation (Health 2)

Process category PC32 Polymer preparations and compounds.

Assessment method ConsExpo v4.1

Exposure Consumer - inhalation, short-term - local and systemic: Exposure 3.7 mg/m³, DNEL 3 mg/m³, RCR 0.195
 Consumer - inhalation, long-term - local and systemic: Exposure 0.6 mg/m³, DNEL 9.5 mg/m³, RCR 0.063