

Ficha de Segurança**DILUENTE ADW**

Ficha de Segurança de 12/06/2023 revisão 1

Atenção: a numeração recomeçou a partir do 1.

SECÇÃO 1: Identificação da substância/mistura e da sociedade/empresa**1.1. Identificador do produto**

Identificação do preparado:

Nome comercial: DILUENTE ADW

Código comercial: 583K

UFI: D2M1-00XS-S00R-AKV1

1.2. Utilizações identificadas relevantes da substância ou mistura e utilizações desaconselhadas

Uso recomendado: Diluente

1.3. Identificação do fornecedor da ficha de dados de segurança

Fornecedor: FASSA Srl

Via Lazzaris, 3 - 31027 Spresiano (TV) - ITALY

Tel. +39 0422 7222

Fax +39 0422 887509

Responsável: laboratorio.spresiano@fassabortolo.it

1.4. Número de telefone de emergência

+351 800 250 250

SECÇÃO 2: Identificação dos perigos**2.1. Classificação da substância ou mistura****Regulamento (CE) n. 1272/2008 (CLP)**

Flam. Liq. 2 Líquido e vapor facilmente inflamáveis.

Eye Irrit. 2 Provoca irritação ocular grave.

STOT SE 3 Pode provocar sonolência ou vertigens.

Efeitos físico-químicos nocivos à saúde humana e ao ambiente:

Nenhum outro risco

2.2. Elementos do rótulo**Regulamento (CE) n. 1272/2008 (CLP)****Pictogramas de perigo e palavra-sinal**

Perigo

Advertências de perigo

H225 Líquido e vapor facilmente inflamáveis.

H319 Provoca irritação ocular grave.

H336 Pode provocar sonolência ou vertigens.

Recomendações de prudência

P210 Manter afastado do calor, superfícies quentes, faísca, chama aberta e outras fontes de ignição. Não fumar.

P233 Manter o recipiente bem fechado.

P261 Evitar respirar os fumos/gases/névoas/vapores/aerossóis.

P280 Use luvas de proteção e proteja os olhos/o rosto.

P312 Caso sinta indisposição, contacte um CENTRO DE INFORMAÇÃO ANTIVENENOS/médico.

P370+P378 Em caso de incêndio: para extinguir utilizar extintor de pó químico.

P403+P235 Armazenar em local bem ventilado. Conservar em ambiente fresco.

Disposições especiais:

EUH066 Pode provocar pele seca ou gretada, por exposição repetida.

Contém:

acetato de etilo
acetato de n-butilo

Disposições especiais de acordo com o Anexo XVII do REACH e sucessivas alterações:

Nenhum

2.3. Outros perigos

Nenhuma substância PBT, mPmB ou desreguladora do sistema endócrino presente numa concentração $\geq 0,1\%$.

Nenhum outro risco

SECÇÃO 3: Composição/informação sobre os componentes

3.1. Substâncias

N.A.

3.2. Misturas

Identificação do preparado: DILUENTE ADW

Componentes perigosos, em conformidade com o Regulamento CLP e relativa classificação:

Quantidade	Nome	Num. de Ident.	Classificação	Número de registo
$\geq 80\%$	acetato de etilo	CAS:141-78-6 EC:205-500-4 Index:607-022-00-5	Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336, EUH066	01-2119475103-46-xxxx
$\geq 5 - < 10\%$	acetato de n-butilo	CAS:123-86-4 EC:204-658-1 Index:607-025-00-1	Flam. Liq. 3, H226; STOT SE 3, H336, EUH066	01-2119485493-29-xxxx

SECÇÃO 4: Medidas de primeiros socorros

4.1. Descrição das medidas de emergência

Em caso de contacto com a pele:

Retirar imediatamente os indumentos contaminados e eliminá-los de forma segura.

Lavar imediatamente com abundante água corrente e eventualmente sabão as partes do corpo que tiverem entrado em contacto com o produto, até mesmo se só houver suspeita do contacto.

Lavar completamente o corpo (duche ou banheira).

Em caso de contacto com os olhos:

Em caso de contacto com os olhos, enxaguá-los com água por um intervalo de tempo adequado e mantendo abertas as pálpebras e consultar imediatamente um oftalmologista.

Proteger o olho ileso.

Em caso de ingestão:

Não induzir o vômito, procure cuidados médicos mostrando a FISPQ e a etiqueta de perigo.

Em caso de inalação:

Levar o acidentado ao ar livre e mantê-lo em local aquecido e em repouso.

4.2. Sintomas e efeitos mais importantes, tanto agudos como retardados

Os sintomas e efeitos são os previstos com os perigos indicados na secção 2.

4.3. Indicações sobre cuidados médicos urgentes e tratamentos especiais necessários

Em caso de incidente ou mal-estar, consulte imediatamente um médico (se possível, mostre as instruções de uso ou a ficha de segurança).

SECÇÃO 5: Medidas de combate a incêndios

5.1. Meios de extinção

Meios de extinção idóneos:

Em caso de incêndio: para extinguir utilizar extintor de pó químico.

CO₂, extintores de pó, espuma, água nebulizada.

Meios de extinção que não devem ser utilizados por razões de segurança:

Jatos de água.

5.2. Perigos especiais decorrentes da substância ou mistura

A combustão produz fumo pesado.

Não inalar os gases produzidos pela explosão e/ou combustão (monóxido e dióxido de carbono, óxidos de azoto).

Os vapores podem formar misturas explosivas com o ar.

5.3. Recomendações para o pessoal de combate a incêndios

Empregar aparelhagens de respiração adequadas.

Recolher separadamente a água contaminada utilizada para extinguir o incêndio. Não descarregar na rede de esgotos.

Se factível quanto à segurança, remover da área de imediato perigo os recipientes não danificados.

SECÇÃO 6: Medidas em caso de fuga accidental

6.1. Precauções individuais, equipamento de protecção e procedimentos de emergência

Usar os dispositivos de protecção individual.

Remover todas as fontes de acendimento.

Colocar as pessoas em local seguro.

Consultar as medidas de protecção expostas no ponto 7 e 8.

6.2. Precauções a nível ambiental

Impedir a penetração no solo/subsolo. Impedir o defluxo nas águas superficiais ou na rede de esgotos.

Em caso de fuga de gás ou penetração em cursos de água, solo ou sistema de esgoto, informe as autoridades responsáveis.

6.3. Métodos e materiais de confinamento e limpeza

Material adequado para a recolha: material absorvente inerte (p. ex. areia, vermiculite).

Retirar a água de lavagem contaminada e eliminá-la.

6.4. Remissão para outras secções

Ver também os parágrafos 8 e 13

SECÇÃO 7: Manuseamento e armazenagem

7.1. Precauções para um manuseamento seguro

Evitar o contacto com a pele e os olhos, a inalação de vapores e névoas.

Não utilizar recipientes vazios antes que tenham sido limpos.

Antes das operações de transferência, assegure-se de que nos recipientes não haja materiais residuais incompatíveis.

Recomendações de ordem geral sobre higiene no local de trabalho:

Os indumentados contaminados devem ser substituídos antes de entrar nas áreas de refeição.

Durante o trabalho não comer nem beber.

Envia-se ao parágrafo 8 para os dispositivos de protecção recomendados.

7.2. Condições de armazenagem segura, incluindo eventuais incompatibilidades

Conservar os recipientes bem fechados em local fresco e arejado, longe de fontes de calor.

Manter longe de chamas vivas, faíscas e fontes de calor. Evitar a exposição directa aos raios do sol.

Manter longe de comidas, bebidas e rações.

Matérias incompatíveis:

Ver o capítulo 10.5

Indicação para os ambientes:

Frescas e adequadamente arejadas.

7.3. Utilização(ões) final(is) específica(s)

Recomendações

Ver o capítulo 1.2

Soluções específicas para o sector industrial

Nenhum uso especial

SECÇÃO 8: Controlo da exposição/Protecção individual

8.1. Parâmetros de controlo

Lista dos componentes com valor OEL

	Tipo OEL	país	Longo prazo mg/m3	Longo Prazo ppm	Curto prazo mg/m3	Curto prazo ppm	Notas
acetato de etilo CAS: 141-78-6	ACGIH			400			URT and eye irr
	UE		734	200	1468	400	
	MAK	AUSTRIA	734.000	200	1468.000	400	
	VLEP	BELGIUM	734.000	200	1468.000	400	
	VLEP	FRANCE	734.000	200	1468.000	400	
	AGW	GERMANY	730.000	200.000	1460.000	400	
	MAK	GERMANY	750.000	200.000	1500.000	400.000	
	ÁK	HUNGARY	1400		1400		
	VLEP	ITALY	734	200.000	1468	400.000	
	NDS	POLAND	734.000		1468.000		
	VLEP	ROMANIA	400.000	111.000	500.000	139.000	

	VLA	SPAIN	734.000	200.000	1460.000	400.000	
	SUVA	SWITZERLAN D	730.000	200.000	1470.000	400.000	
	WEL	U.K.	730.000	200.000	1460.000	400.000	
	VLE	PORTUGAL	734.000	200.000	1468.000	400.000	
	GVI	CROATIA	734.000	200.000	1468.000	400.000	
	MV	SLOVENIA	734.000	200.000	1468.000	400.000	
	TLV	CZECHIA	700.000	191.100	900.000	245.700	
	IPRV	LITHUANIA	500.000	150.000	1100.000	300.000	
	TLV	BULGARIA	734.000	200.000	1468.000	400.000	
acetato de n-butilo CAS: 123-86-4	ACGIH			50		150	Eye and URT irr
	UE		241	50	723	150	
	MAK	AUSTRIA	480	100	480.000	100.000	
	VLEP	BELGIUM	238.000	50.000	712.000	150.000	Butylacetates, all isomers
	VLEP	FRANCE	710.000	150	940.000	200	
	AGW	GERMANY	300.000	62.000	600.000	124.000	
	MAK	GERMANY	480.000	100.000	960.000	200	
	ÁK	HUNGARY	950		950		
	NDS	POLAND	240		720		
	VLEP	ROMANIA	715.000	150.000	950.000	200.000	
	VLA	SPAIN	724.000	150.000	965.000	200.000	
	SUVA	SWITZERLAN D	240.000	50.000	720.000	150.000	
	WEL	U.K.	724.000	150.000	966.000	200.000	
	GVI	CROATIA	724.000	150.000	966.000	200.000	
	MV	SLOVENIA	300.000	62.000	600.000	124.000	
	TLV	CZECHIA	241.000		723.000		
	TLV	BULGARIA	710.000		950.000		

Valores de concentração previsivelmente sem efeitos (PNEC)

	Limite PNEC	Via de exposição	Frequência de exposição	Notas
acetato de etilo CAS: 141-78-6	0.024 mg/l	Água do mar		
	0.24 mg/l	Água doce		
	0.115 mg/kg	Sedimentos de água do mar		
	1.15 mg/kg	Sedimentos de água doce		
	650 mg/l	Microrganismos nos tratamentos de depuração (STP)		
	0.148 mg/kg	Solo (agricultura)		
acetato de n-butilo CAS: 123-86-4	0.018 mg/l	Água do mar		
	0.18 mg/l	Água doce		
	0.098 mg/kg	Sedimentos de água do mar		
	0.981 mg/kg	Sedimentos de água doce		

35.6 mg/l Microrganismos nos tratamentos de depuração (STP)

0.09 mg/kg Solo (agricultura)

Nível derivado de exposição sem efeito (DNEL)

	Trabalhador industrial	Trabalhador profissional	Consumidor	Via de exposição	Frequência de exposição	Notas
acetato de etilo CAS: 141-78-6	734 mg/m ³	367 mg/m ³		Por inalação humana	De longo prazo, efeitos sistémicos	
	734 mg/m ³	367 mg/m ³		Por inalação humana	De longo prazo, efeitos locais	
	1468 mg/m ³	734 mg/m ³		Por inalação humana	De curto prazo, efeitos sistémicos	
	1468 mg/m ³	734 mg/m ³		Por inalação humana	De curto prazo, efeitos locais	
	63 mg/kg	37 mg/kg		Dérmica humana	De longo prazo, efeitos sistémicos	
			4.5 mg/kg	Oral humana	De longo prazo, efeitos sistémicos	
acetato de n-butilo CAS: 123-86-4	300 mg/m ³	35.7 mg/m ³		Por inalação humana	De longo prazo, efeitos sistémicos	
	600 mg/m ³	300 mg/m ³		Por inalação humana	De curto prazo, efeitos sistémicos	
	300 mg/m ³	35.7 mg/m ³		Por inalação humana	De longo prazo, efeitos locais	
	600 mg/m ³	300 mg/m ³		Por inalação humana	De curto prazo, efeitos locais	
	11 mg/kg	6 mg/kg		Dérmica humana	De longo prazo, efeitos sistémicos	
	11 mg/kg	6 mg/kg		Dérmica humana	De curto prazo, efeitos sistémicos	
			2 mg/kg	Oral humana	De curto prazo, efeitos sistémicos	
			2 mg/kg	Oral humana	De longo prazo, efeitos sistémicos	

8.2. Controlo da exposição

Providenciar ventilação adequada. Sempre que possível, isso deve ser feito com o uso de ventilação local e boa extração geral.

Protecção dos olhos:

Óculos com protecção lateral (EN 166).

Protecção da pele:

O pessoal deve usar roupa anti-estática em fibra natural ou em fibra sintética resistente às altas temperaturas.

Protecção das Mãos:

Não há nenhum material ou combinação de materiais para luvas que possa garantir uma resistência ilimitada a qualquer produto químico ou combinação de produtos.

Para o manuseamento prolongado ou repetido, utilizar luvas resistentes a produtos químicos.

Materiais apropriados para luvas de protecção (EN 374/EN 16523); FKM (Borracha fluorada): espessura \geq 0.4 mm; tempo de permeação \geq 480 min.; NBR (Borracha de nitrilo): espessura \geq 0.4 mm; tempo de permeação \geq 480 min.

A escolha das luvas de protecção apropriadas não depende apenas do material, mas também de outras características de qualidade,

variáveis entre um fabricante e outro, e dos modos e tempos de utilização da mistura.

Protecção respiratória:

Se os trabalhadores estiverem expostos a concentrações acima do limite de exposição devem usar máscaras certificadas apropriadas.

Dispositivo de filtragem combinada (EN 14387): máscara com filtro A-P2.

Controles da exposição ambiental:

Ver o capítulo 6.2

Medidas de higiene e técnicas

Ver o parágrafo 7.

SECÇÃO 9: Propriedades físico-químicas

9.1. Informações sobre propriedades físicas e químicas de base

Aspecto: Líquido

Cor: incolor

Odor: frutoso

Ponto de fusão/congelamento: N.D.

Ponto de ebulição inicial e intervalo de ebulição: > 77 °C (171 °F)

Inflamabilidade: O produto é classificado Flam. Liq. 2 H225

Limite superior/inferior de inflamabilidade ou explosão: N.D.

Ponto de inflamação: < 23°C

Temperatura de autoignição: N.D.

Temperatura de decomposição: N.D.

pH: N.A. (Não aplicável devido à natureza do produto)

Viscosidade cinemática: N.A.

Densidade: 0,9 kg/l (Método interno)

Densidade dos vapores: 3,04

Pressão de vapor: N.D.

Hidrosolubilidade: N.A.

Solubilidade em óleo: N.A.

Coefficiente de partição (n-octanol/água): N.A.

Características das partículas:

Dimensão das partículas: N.A.

9.2. Outras informações

Condutividade: N.D.

Propriedades explosivas: N.A.

Propriedades comburentes: N.A.

Taxa de evaporação: N.A.

SECÇÃO 10: Estabilidade e reatividade

10.1. Reatividade

Estável em condições normais

10.2. Estabilidade química

Estável em condições normais

10.3. Possibilidade de reações perigosas

Por efeito do calor ou em caso de incêndio podem-se libertar óxidos de carbono e vapores que podem ser nocivos para a saúde.

Manter afastado de agentes oxidantes e materiais fortemente alcalinos e fortemente ácidos para evitar reações exotérmicas.

Os vapores podem formar misturas explosivas com o ar.

10.4. Condições a evitar

Evitar a proximidade com fontes de calor.

10.5. Materiais incompatíveis

Evite o contacto com materiais oxidantes. O produto pode incendiar-se.

Ver o capítulo 10.3

10.6. Produtos de decomposição perigosos

Não se verificam produtos de decomposição perigosos no caso de armazenagem e manipulação adequadas.

Ver o capítulo 5.2

SECÇÃO 11: Informação toxicológica

11.1. Informações sobre as classes de perigo, tal como definidas no Regulamento (CE) n.o 1272/2008

Informação toxicológica do produto:

a) Toxicidade aguda

Não classificado

Com base nos dados disponíveis, os critérios de classificação não são preenchidos.

b) Corrosão/irritação cutânea	Não classificado	Com base nos dados disponíveis, os critérios de classificação não são preenchidos.
c) Lesões oculares graves/irritação ocular	O produto é classificado: Eye Irrit. 2(H319)	
d) Sensibilização respiratória ou cutânea	Não classificado	Com base nos dados disponíveis, os critérios de classificação não são preenchidos.
e) Mutagenicidade em células germinativas	Não classificado	
f) Carcinogenicidade	Não classificado	Com base nos dados disponíveis, os critérios de classificação não são preenchidos.
g) Toxicidade reprodutiva	Não classificado	Com base nos dados disponíveis, os critérios de classificação não são preenchidos.
h) Toxicidade para órgãos-alvo específicos (STOT) – exposição única	O produto é classificado: STOT SE 3(H336)	
i) Toxicidade para órgãos-alvo específicos (STOT) – exposição repetida	Não classificado	Com base nos dados disponíveis, os critérios de classificação não são preenchidos.
j) Perigo de aspiração	Não classificado	Com base nos dados disponíveis, os critérios de classificação não são preenchidos.

Informação toxicológica das substâncias principais encontrada no produto:

acetato de etilo	a) Toxicidade aguda	LD50 Oral Ratazana 4934 mg/kg LD50 Pele Coelho > 20000 mg/kg LC50 Vapores de inalação Ratazana > 22.5 mg/l 6h
acetato de n-butilo	a) Toxicidade aguda	LD50 Oral Ratazana 10760 mg/kg LD50 Pele Coelho 14112 mg/kg LC50 Vapores de inalação Ratazana > 21.1 mg/l 4h

11.2. Informações sobre outros perigos

Propriedades desreguladoras do sistema endócrino:

Nenhuma substância desreguladora do sistema endócrino presente numa concentração $\geq 0,1\%$

SECÇÃO 12: Informação ecológica

Utilizar segundo os bons usos profissionais, evitando de dispersar o produto no ambiente.

12.1. Toxicidade

Informação Ecotoxicológica:

Lista das propriedades ecotoxicológicas do produto

Não classificado para perigos ambientais
Não existem dados disponíveis para o produto

Lista de componentes com propriedades ecotoxicológicas

Componente	Num. de Ident. Inf. Ecotox.
acetato de etilo	CAS: 141-78-6 - a) Toxicidade aquática aguda : LC50 Peixes 230 mg/l 96h EINECS: 205-500-4 - INDEX: 607-022-00-5
	a) Toxicidade aquática aguda : EC50 Daphnia 165 mg/l 48h
acetato de n-butilo	CAS: 123-86-4 - a) Toxicidade aquática aguda : LC50 Peixes 18 mg/l 96h EINECS: 204-658-1 - INDEX: 607-025-00-1
	a) Toxicidade aquática aguda : EC50 Daphnia 44 mg/l 48h a) Toxicidade aquática aguda : EC50 Algas 675 mg/l 72h

12.2. Persistência e degradabilidade

Componente	Persistência/degradabilidade:
acetato de etilo	Rapidamente degradável
acetato de n-butilo	Rapidamente degradável

12.3. Potencial de bioacumulação

N.A.

12.4. Mobilidade no solo

N.A.

12.5. Resultados da avaliação PBT e mPmB

Com base nos dados disponíveis, o produto não contém substâncias PBT/mPmB em percentagem \geq 0.1%.

12.6. Propriedades desreguladoras do sistema endócrino

Nenhuma substância desreguladora do sistema endócrino presente numa concentração \geq 0,1%

12.7. Outros efeitos adversos

N.A.

SECÇÃO 13: Considerações relativas à eliminação

13.1. Métodos de tratamento de resíduos

Recuperar se for possível. Enviar para instalações de eliminação autorizadas ou para incineradoras em condições controladas. Actuar em conformidade com as vigentes disposições locais e nacionais.

Não permitir a contaminação de esgotos ou cursos de água.

Eliminar os recipientes contaminados pelo produto, de acordo com o local ou nacional disposições legais.

SECÇÃO 14: Informações relativas ao transporte



14.1. Número ONU ou número de ID

1993

14.2. Designação oficial de transporte da ONU

ADR-Nome expedição: FLAMMABLE LIQUID, N.O.S. (acetato de etilo - acetato de n-butilo)

IATA-Nome técnico: FLAMMABLE LIQUID, N.O.S. (acetato de etilo - acetato de n-butilo)

IMDG-Nome técnico: FLAMMABLE LIQUID, N.O.S. (acetato de etilo - acetato de n-butilo)

14.3. Classe(s) de perigo para efeitos de transporte

ADR-Classe: 3

IATA-Classe: 3

IMDG-Classe: 3

14.4. Grupo de embalagem

ADR-Grupo Embalagem: II

IATA-Grupo Embalagem: II

IMDG-Grupo Embalagem: II

14.5. Perigos para o ambiente

Poluente marinho: Não

Poluente ambiental: Não

IMDG-EMS: F-E, S-E

14.6. Precauções especiais para o utilizador

Estrada e ferrovias (ADR-RID):

ADR-Rótulo: 3

ADR - Número de identificação do perigo: 33

ADR-Suprimentos especiais: 274 601 640D

ADR-Código de restrição em galeria:

Via aérea (IATA):

IATA-Aeronave Passageiros: 353

IATA-Aeronave de carga: 364

IATA-Rótulo: 3

IATA-Perigo Secundário: -

IATA-Erg: 3H

IATA-Suprimentos especiais: A3

Via marítima (IMDG):

IMDG-Código estivagem: Category B

IMDG-Nota Estivagem: -

IMDG-Perigo Secundário: -

IMDG-Suprimentos especiais: 274

14.7. Transporte marítimo a granel em conformidade com os instrumentos da OMI

N.A.

SECÇÃO 15: Informação sobre regulamentação

15.1. Regulamentação/legislação específica para a substância ou mistura em matéria de saúde, segurança e ambiente

Dir. 98/24/CE (Riscos relativos a agentes químicos no trabalho)

Dir. 2000/39/CE (Valores limites de exposição no trabalho)

Diretiva 2010/75/UE

Regulamento (CE) n. 1907/2006 (REACH)

Regulamento (CE) n. 1272/2008 (CLP)

Regulamento (CE) n. 790/2009 (ATP 1 CLP) e (EU) n. 758/2013

Regulamento (EU) n. 2020/878

Regulamento (EU) n. 286/2011 (ATP 2 CLP)

Regulamento (EU) n. 618/2012 (ATP 3 CLP)

Regulamento (EU) n. 487/2013 (ATP 4 CLP)

Regulamento (EU) n. 944/2013 (ATP 5 CLP)

Regulamento (EU) n. 605/2014 (ATP 6 CLP)

Regulamento (EU) n. 2015/1221 (ATP 7 CLP)

Regulamento (EU) n. 2016/918 (ATP 8 CLP)

Regulamento (EU) n. 2016/1179 (ATP 9 CLP)

Regulamento (EU) n. 2017/776 (ATP 10 CLP)

Regulamento (EU) n. 2018/669 (ATP 11 CLP)

Regulamento (EU) n. 2018/1480 (ATP 13 CLP)

Regulamento (EU) n. 2019/521 (ATP 12 CLP)

Regulamento (EU) n. 2020/217 (ATP 14 CLP)

Regulamento (EU) n. 2020/1182 (ATP 15 CLP)

Regulamento (EU) n. 2021/643 (ATP 16 CLP)

Regulamento (EU) n. 2021/849 (ATP 17 CLP)

Regulamento (EU) n. 2022/692 (ATP 18 CLP)

Limitações respeitantes ao produto ou às substâncias contidas, de acordo com o Anexo XVII do Regulamento (CE) 1907/2006 (REACH) e sucessivas modificações:

Limitações respeitantes ao produto: 3, 40

Limitações respeitantes às substâncias contidas: 75

Provisões relacionadas com a Diretiva da UE 2012/18 (Seveso III):

Categoria Seveso III de acordo com o Anexo 1, parte 1	Limiar de nível inferior (toneladas)	Limiar de nível superior (toneladas)
o produto pertence à categoria: P5c	5000	50000

Regulamento (UE) n. 649/2012 (Regulamento PIC)

Não há substâncias listadas

Classe de perigo aquático - Alemanha

1: Low hazard to waters

Substâncias SVHC:

Com base nos dados disponíveis, o produto não contém substâncias SVHC em percentagem $\geq 0.1\%$.

15.2. Avaliação da segurança química

Não foi realizada nenhuma Avaliação da Segurança Química para a mistura

SECÇÃO 16: Outras informações

Código	Descrição
EUH066	Pode provocar pele seca ou gretada, por exposição repetida.
H225	Líquido e vapor facilmente inflamáveis.
H226	Líquido e vapor inflamáveis.
H319	Provoca irritação ocular grave.
H336	Pode provocar sonolência ou vertigens.

Código	Classe de perigo e categoria de perigo	Descrição
2.6/2	Flam. Liq. 2	Líquido inflamável, Categoria 2
2.6/3	Flam. Liq. 3	Líquido inflamável, Categoria 3
3.3/2	Eye Irrit. 2	Irritação ocular, Categoria 2
3.8/3	STOT SE 3	Toxicidade para órgãos-alvo específicos — exposição única, Categoria 3

Classificação e procedimento utilizado para determinar a classificação das misturas em conformidade com o Regulamento (CE) n.º 1272/2008 [CRE]:

Classificação em conformidade com o Regulamento (CE) n.º 1272/2008

Classificação em conformidade com o Regulamento (CE) n.º 1272/2008	Procedimento de classificação
2.6/2	Com base em dados de ensaio
3.3/2	Método de cálculo
3.8/3	Método de cálculo

Este documento foi preparado por pessoa com formação apropriada

Principais fontes bibliográficas:

ECDIN - Rede de Informação e Dados de Produtos Químicos Ambientais - Centro de Pesquisa Unido, Comissão das Comunidades Europeias

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS (PROPRIEDADES PERIGOSAS DE MATERIAIS INDUSTRIAIS da SAX) - Oitava Edição - Van Nostrand Reinold

Fichas de dados de segurança dos fornecedores de matérias-primas.

CCNL - Anexo 1

As informações aqui contidas baseiam-se nos nossos conhecimentos na data acima indicada. Referem-se exclusivamente ao produto indicado e não constituem garantia particular de qualidade.

O utilizador é obrigado a assegurar-se que esta informação é apropriada e completa com respeito ao uso específico a que se destina.

Esta ficha anula e substitui todas as edições precedentes. u prolongada ao produto por inalação, ingestão ou contacto com a pele.

Legenda das abreviações e acrónimos utilizados nesta folha de dados de segurança:

ACGIH: Conferência Americana de Higienistas Industriais Governamentais

ADR: Acordo Europeu sobre Transporte Rodoviário Internacional de Mercadorias Perigosas

ATE: Estimativa de Toxicidade Aguda

ATEmix: Estimativa da toxicidade aguda (Misturas)

BEI: Índice biológico de exposição

CAS: Chemical Abstracts Service (sector da Sociedade Americana de Química).

CAV: Centro Antivenenos

CE: Comunidade Europeia

CLP: Classificação, rotulagem, embalagem.

CMR: Cancerígeno, Mutagénico e Reprotóxico

COV: Composto Orgânico Volátil

CSA: Avaliação de Segurança Química

CSR: Relatório de Segurança Química

DNEL: Nível derivado de exposição sem efeito

EC50: Média Concentração Máxima Efetiva

ECHA: Agência Europeia dos Produtos Químicos

EINECS: Inventário Europeu de Substâncias Químicas Existentes em Comércio

ES: Cenário de Exposição

GefStoffVO: Normativa sobre Substâncias Perigosas, Alemanha

GHS: Sistema globalmente harmonizado de Classificação e Rotulagem de produtos químicos

IARC: Centro Internacional de Investigação do Cancro

IATA: Associação Internacional Transporte Aéreo

IC50: Média Concentração Máxima Inibitória

IMDG: Código marítimo internacional para mercadorias perigosas.

LC50: Concentração letal para 50% da população de teste

LD50: Dose letal para 50% da população de teste.

LDLo: Baixa Dose Letal
N.A.: Não Aplicável
N/A: Não Aplicável
N/D: Indefinido / Não disponível
N.D.: Não disponível
NIOSH: Instituto Nacional para Segurança e Saúde Ocupacional
NOAEL: Nível sem efeitos adversos observados
OSHA: Administração de Segurança e Saúde Ocupacional
PBT: Persistente, bioacumulável e tóxico
PGK: Instruções de embalagem
PNEC: Concentração previsivelmente sem efeitos
PSG: Passageiros
RID: Regulamentação relativa ao Transporte Ferroviário Internacional de Mercadorias Perigosas.
STEL: Limite de exposição a curto prazo
STOT: Toxicidade para órgão alvo específico
TLV: Valor limite de limiar
TLV-TWA: Valor limite de limiar para media ponderada do tempo - 8 horas/dia (Padrão ACGIH)
vPvB: Muito persistente, muito bioacumulável
WGK: Classe de perigo aquático - Alemanha

Ethyl acetate

Substance identification

Chemical Name: Ethyl acetate

CAS number: 141-78-6

ETHYL ACETATE

ES 1: Cosmetics, personal care products (PC39); User for consumers (SU21).

ES 2: Filling of drums and small packages (CS6); INDUSTRIAL USES (SU3).

ES 3: Formulation or repackaging (F); INDUSTRIAL USES (SU3).

ES 4: Use of non-reactive processing aid at industrial site (no inclusion in article) (ERC4); Industrial uses (su3);; Extraction agents (PC40).

ES 5: PROFESSIONAL APPLICATION OF COATINGS AND INKS; INDUSTRIAL USES (SU3).

ES 6: Use as laboratory reagent (PROC15); Industrial uses (su3);; Industrial use.

ES 7: Use in cleaning products (GEST4_I, GEST4_P, GEST4_C); INDUSTRIAL USES (SU3).

ES 8: Use in lubricants (GEST6_I, GEST6_P, GEST6_C); INDUSTRIAL USES (SU3).

ES 9: Professional application of coatings and inks (14); INDUSTRIAL USES (SU3). Covers use in coatings (paints, inks, adhesives, etc.) including exposures during use (receipt of material, storage, preparation and transfer of bulk and semi-bulk products, application by spray, roller or spreader, dipping, flow, fluidized bed on production lines and film formation), the cleaning and maintenance of the equipment and the associated laboratory activities [GES3_].

ES 10: Use as laboratory reagent (PROC15);; Industrial uses (su3);; Professional (G27).

ES 11: Use in agrochemical products (GEST11_P, GEST11_C); INDUSTRIAL USES (SU3).

ES 12: Use in detergent products (GEST4_I, GEST4_P, GEST4_C).

ES 13: Use in lubricants (GEST6_I, GEST6_P, GEST6_C)

ES 14: Adhesives, Sealants (PC1); Use in coatings (GEST3_I, GEST3_P, GEST3_C).

ES 5: PROFESSIONAL APPLICATION OF COATINGS AND INKS (17); INDUSTRIAL USES (SU3).

5.1. USE AT INDUSTRIAL SITES

Environment

SC 1: Use of non-reactive processing aid at industrial site (no inclusion in article) ERC4

Worker

SC 2: Generalized exposures (closed systems) PROC1

SC 3: Generalized exposures (closed systems); Use in closed systems, with sample taking PROC2

SC 4: Film formation - forced drying (50 -100°C). Stove (>100°C), Curing by UV/EB radiation PROC2

SC 5: Mixing operations, Generalized exposures PROC3

SC 6: Film formation, air drying PROC4

SC 7: Preparation of material for application, Mixing operations (open systems) PROC5

SC 8: Spraying (automatic/robotic) PROC7

SC 9: Manual spraying PROC7

SC 10: Material transfers, Non-Specialized site PROC8a

SC 11: Material transfers, Specialized site PROC8b

SC 12: Roller, diffusion, flow application PROC10

SC 13: Immersion, dipping and pouring PROC13

SC 14: Laboratory activities PROC15

SC 15: Material transfers, Drum/batch transfers, Transfer from/pour from containers PROC9

SC 16: Production or preparation of articles by tableting, compression, extrusion or pelettisation. PROC14

5.2. CONDITIONS OF USE THAT AFFECT EXPOSURE

5.2.1 Environmental exposure control: Use of non-reactive processing aid at industrial site (no inclusion in article) (ERC4)

Amount used (or contained in articles), frequency and duration of use/exposure

Daily amount per site: ≤ 1 t/day

Annual amount per site: ≤ 300 t/year

Organizational and technical measures and conditions

A wastewater treatment plant is expected.

Assumed domestic sewage treatment plant flow: ≥ 2E³ m³/day.

Conditions and measures for waste treatment (including the article of waste)

Waste treatment: Dispose of waste products or used containers according to local regulations.

Other conditions affecting environmental exposure

Water flow on the receiving surface: 18,000 m³/day.

5.2.2. Worker Exposure Control: Chemical production or refinement in closed processes without likelihood of exposure or in processes with equivalent containment conditions (PROC1)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.3. Worker Exposure Control: Chemical production or refinery in closed process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.4. Worker Exposure Control: Chemical production or refinery in closed process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.5. Worker Exposure Control: Chemical production or formulation in closed batch processes, with occasional controlled exposure or processes with equivalent containment conditions (PROC3)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.6. Worker Exposure Control: Production of chemicals with the possibility of exposure (PROC4)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.7. Worker Exposure Control: Mixing or blending in batch processes (PROC5)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.8. Worker Exposure Control: Industrial spraying (PROC7)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 95%

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.9. Worker Exposure Control: Industrial spraying (PROC7)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 95%

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.10. Worker Exposure Control: Transfer of a substance or a preparation (filling/emptying) at non-dedicated facilities (PROC8a)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.11. Worker Exposure Control: Transfer of a substance or a mixture (charging/discharging) at dedicated facilities (PROC8b)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 95%

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.12. Worker Exposure Control: Application with rollers or brushes (PROC10)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.13. Worker Exposure Control: Treatment of articles by dipping and pouring (PROC13)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.14. Worker Exposure Control: Use as laboratory reagents (PROC15)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.15. Worker Exposure Control: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.16. Worker Exposure Control: Tableting, compression, extrusion, pelletising, granulation (PROC14)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.3. EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

5.3.1. Environmental release and exposure: Use of non-reactive processing aid at industrial site (no inclusion in article) (ERC4)

Route release	Release rate	Method for estimating for release
water	20 kg/day	Estimated release factor
air	980 kg/day	Estimated release factor
Soil	0 kg/day	Estimated release factor

Protection target	Estimated exposure	RCR
Fresh water	0.119 mg/l (EUSES v2.1)	0,495
freshwater sediments	0.708 mg/kg dry weight (EUSES v2.1)	0,616
Sea water	0.012 mg/l (EUSES v2.1)	0,495
Marine sediment	0.071 mg/kg dry weight (EUSES v2.1)	0,617
Sewage treatment plant	1.184 mg/l (EUSES v2.1)	< 0.01
Farmland	0.081 mg/kg dry weight (EUSES v2.1)	0,547
Prey for predators (freshwater)	1.469 mg/kg dry weight (EUSES v2.1)	< 0.01
Prey for predators (marine water)	0.148 mg/kg dry weight (EUSES v2.1)	< 0.01
Main predator prey (marine water)	0.031 mg/kg dry weight (EUSES v2.1)	< 0.01
Prey for Predators (Terrestrial)	0.028 mg/kg dry weight (EUSES v2.1)	< 0.01

5.3.2. Worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	0.037 mg/m ³ (ECETOC TRA worker v3)	< 0.01
inhalation	systemic	Short term	0.147 mg/m ³ (ECETOC TRA worker v3)	< 0.01
inhalation	local	Long-term	0.037 mg/m ³ (ECETOC TRA worker v3)	< 0.01
inhalation	local	Short term	0.147 mg/m ³ (ECETOC TRA worker v3)	< 0.01
dermal	systemic	Long-term	0.034 mg/kg p.c./day (ECETOC TRA worker v3)	< 0.01
combined routes	systemic	Long-term	/	< 0.01

5.3.3. Worker exposure: Chemical production or refinery in closed process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	361.7 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	361.7 mg/m ³ (ECETOC TRA worker v3)	0.25
dermal	systemic	Long-term	1.37 mg/kg p.c./day (ECETOC TRA worker v3)	0.022
combined routes	systemic	Long-term	/	0.147

5.3.4. Worker exposure: Chemical production or refinery in closed process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	361.7 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	361.7 mg/m ³ (ECETOC TRA worker v3)	0.25
dermal	systemic	Long-term	1.37 mg/kg p.c./day (ECETOC TRA worker v3)	0.022
combined routes	systemic	Long-term	/	0.147

5.3.5. Worker exposure: Chemical production or formulation in closed batch processes, with occasional controlled exposure or processes with equivalent containment conditions (PROC3)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	183.5 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	systemic	Short term	734.2 mg/m ³ (ECETOC TRA worker v3)	0.5
inhalation	local	Long-term	183.5 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	local	Short term	734.2 mg/m ³ (ECETOC TRA worker v3)	0.5
dermal	systemic	Long-term	0.69 mg/kg p.c./day (ECETOC TRA worker v3)	0.011
combined routes	systemic	Long-term	/	0.261

5.3.6. Worker exposure: Production of chemicals with the possibility of exposure (PROC4)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	36.71 mg/m ³ (ECETOC TRA worker v3)	0.05
inhalation	systemic	Short term	146.8 mg/m ³ (ECETOC TRA worker v3)	0.1
inhalation	local	Long-term	36.71 mg/m ³ (ECETOC TRA worker v3)	0.05
inhalation	local	Short term	146.8 mg/m ³ (ECETOC TRA worker v3)	0.1
dermal	systemic	Long-term	6.86 mg/kg p.c./day (ECETOC TRA worker v3)	0.109
combined routes	systemic	Long-term	/	0.159

5.3.7. Worker exposure: Mixing or blending in batch processes (PROC5)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	367.1 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	367.1 mg/m ³ (ECETOC TRA worker v3)	0.25
dermal	systemic	Long-term	13.71 mg/kg p.c./day (ECETOC TRA worker v3)	0.218
combined routes	systemic	Long-term	/	0.343

5.3.8. Worker exposure: Industrial spraying (PROC7)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	367.1 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	367.1 mg/m ³ (ECETOC TRA worker v3)	0.25
dermal	systemic	Long-term	42.86 mg/kg p.c./day (ECETOC TRA worker v3)	0.68
combined routes	systemic	Long-term	/	0.805

5.3.9. Worker exposure: Industrial spraying (PROC7)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	367.1 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	367.1 mg/m ³ (ECETOC TRA worker v3)	0.25
dermal	systemic	Long-term	42.86 mg/kg p.c./day (ECETOC TRA worker v3)	0.68
combined routes	systemic	Long-term	/	0.805

5.3.10. Worker exposure: Transfer of a substance or a preparation (filling/emptying) at non-dedicated facilities (PROC8a)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	367.1 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	367.1 mg/m ³ (ECETOC TRA worker v3)	0.25
dermal	systemic	Long-term	13.71 mg/kg p.c./day (ECETOC TRA worker v3)	0.218
combined routes	systemic	Long-term	/	0.343

5.3.11. Worker exposure: Transfer of a substance or a mixture (charging/discharging) at dedicated facilities (PROC8b)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	27.53 mg/m ³ (ECETOC TRA worker v3)	0,038
inhalation	systemic	Short term	110.1 mg/m ³ (ECETOC TRA worker v3)	0,075
inhalation	local	Long-term	27.53 mg/m ³ (ECETOC TRA worker v3)	0,038
inhalation	local	Short term	110.1 mg/m ³ (ECETOC TRA worker v3)	0,075
dermal	systemic	Long-term	13.71 mg/kg p.c./day (ECETOC TRA worker v3)	0.218
combined routes	systemic	Long-term	/	0.255

5.3.12. Worker exposure: Application with rollers or brushes (PROC10)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	367.1 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	367.1 mg/m ³ (ECETOC TRA worker v3)	0.25
dermal	systemic	Long-term	27.43 mg/kg p.c./day (ECETOC TRA worker v3)	0.435
combined routes	systemic	Long-term	/	0.56

5.3.13. Worker exposure: Treatment of articles by dipping and pouring (PROC13)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	367.1 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	367.1 mg/m ³ (ECETOC TRA worker v3)	0.25
dermal	systemic	Long-term	13.71 mg/kg p.c./day (ECETOC TRA worker v3)	0.218
combined routes	systemic	Long-term	/	0.343

5.3.14. Worker exposure: Use as laboratory reagents (PROC15)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	183.5 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	systemic	Short term	734.2 mg/m ³ (ECETOC TRA worker v3)	0.5
inhalation	local	Long-term	183.5 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	local	Short term	734.2 mg/m ³ (ECETOC TRA worker v3)	0.5
dermal	systemic	Long-term	0.34 mg/kg p.c./day (ECETOC TRA worker v3)	< 0.01
combined routes	systemic	Long-term	/	0.255

5.3.15. Worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	73.42 mg/m ³ (ECETOC TRA worker v3)	0.1
inhalation	systemic	Short term	293.6 mg/m ³ (ECETOC TRA worker v3)	0.2
inhalation	local	Long-term	73.42 mg/m ³ (ECETOC TRA worker v3)	0.1
inhalation	local	Short term	293.6 mg/m ³ (ECETOC TRA worker v3)	0.2
dermal	systemic	Long-term	6.86 mg/kg p.c./day (ECETOC TRA worker v3)	0.109
combined routes	systemic	Long-term	/	0.209

5.3.16. Worker exposure: Tableting, compression, extrusion, pelletising, granulation (PROC14)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	367.1 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	367.1 mg/m ³ (ECETOC TRA worker v3)	0.25
dermal	systemic	Long-term	3.43 mg/kg p.c./day (ECETOC TRA worker v3)	0.054
combined routes	systemic	Long-term	/	0.179

5.4. GUIDANCE FOR DOWNSTREAM USERS TO ASSESS WHETHER THEY COMPLY WITH THE LIMITS SET BY THE EXPOSURE SCENARIO

Guidance to check compliance with the exposure scenario: <https://echa.europa.eu/>

ES 9: PROFESSIONAL APPLICATION OF COATINGS AND INKS (14); INDUSTRIAL USES (SU3). COVERS USE IN COATINGS (PAINTS, INKS, ADHESIVES, ETC.) INCLUDING EXPOSURES DURING USE (RECEIPT OF MATERIAL, STORAGE, PREPARATION AND TRANSFER OF BULK AND SEMI-BULK PRODUCTS, APPLICATION BY SPRAY, ROLLER OR SPREADER, DIPPING, FLOW, FLUIDIZED BED ON PRODUCTION LINES AND FILM FORMATION), THE CLEANING AND MAINTENANCE OF THE EQUIPMENT AND THE ASSOCIATED LABORATORY ACTIVITIES [GES3_I].

9.1. WIDE DISPERSIVE USE BY PROFESSIONAL WORKERS

Environment

SC 1: Wide dispersive use of non-reactive processing aid (no inclusion into the article, outdoor) ERC8d

Worker

SC 3: Generalized exposures (closed systems) PROC1
SC 4: Filling of equipment from drums and containers PROC2
SC 5: Generalized exposures (closed systems), Use in closed systems PROC2
SC 6: Preparation of material for application, Generalized exposures PROC3
SC 7: Film formation - air drying, Indoor use PROC4
SC 8: Film formation - air drying, Outdoor use PROC4
SC 9: Preparation of material for application, Indoor use PROC5
SC 10: Preparation of material for application, Outdoor use PROC5
SC 11: Material transfers, Drum/batch transfers, Non-Specialized site PROC8a
SC 12: 12 Material Transfers, Drum/batch transfers, specialized site PROC8b
SC 13: Roller, diffusion, flow application, Indoor use PROC10
SC 14: Roller, diffusion, flow application, Outdoor use PROC10
SC 15: Manual spraying, Indoor use PROC11
SC 16: Manual spraying, Outdoor use PROC11
SC 17: Immersion, dipping and pouring, Indoor use PROC13
SC 18: Immersion, dipping and pouring, Outdoor use PROC13
SC 19: Laboratory activities PROC15
SC 20: Hand application - finger paints, crayons, stickers, Indoor use PROC19
SC 21: Hand application - finger paints, crayons, stickers, Outdoor use PROC19

9.2. CONDITIONS OF USE THAT AFFECT EXPOSURE

9.2.1 Environmental exposure control: Wide dispersive use of non-reactive processing aid (no inclusion into the article, outdoor) (ERC8d)

Organizational and technical measures and conditions

A wastewater treatment plant is expected.

Conditions and measures for waste treatment (including the article of waste)

Waste treatment: Dispose of waste products or used containers according to local regulations.

9.2.3. Worker Exposure Control: Chemical production or refinement in closed processes without likelihood of exposure or in processes with equivalent containment conditions (PROC1)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.2.4. Worker Exposure Control: Chemical production or refinery in closed process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.2.5. Worker Exposure Control: Chemical production or refinery in closed process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.2.6. Worker Exposure Control: Chemical production or formulation in closed batch processes, with occasional controlled exposure or processes with equivalent containment conditions (PROC3)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a basic level of general ventilation (3 to 5 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.2.7. Worker Exposure Control: Production of chemicals with the possibility of exposure (PROC4)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 80%

Provide a basic level of general ventilation (3 to 5 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.2.8. Worker Exposure Control: Production of chemicals with the possibility of exposure (PROC4)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.2.9. Worker Exposure Control: Mixing or blending in batch processes (PROC5)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 80%

Provide a basic level of general ventilation (3 to 5 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.2.10. Worker Exposure Control: Mixing or blending in batch processes (PROC5)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable respirator.

For more information, refer to Section 8 of the SDS (safety data sheet).

Inhalation - minimum yield of 90%

Other conditions affecting worker exposure

Indoor and outdoor use: Outdoor use

Temperature: Process temperature up to 40°C is assumed

9.2.11. Worker Exposure Control: Transfer of a substance or a preparation (filling/emptying) at non-dedicated facilities (PROC8a) (PROC8b)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

Provide a basic level of general ventilation (3 to 5 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.2.12. Worker Exposure Control: Transfer of a substance or a mixture (charging/discharging) at dedicated facilities (PROC8b)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.2.13. Worker Exposure Control: Application with rollers or brushes (PROC10)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 80%

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.2.14. Worker Exposure Control: Application with rollers or brushes (PROC10)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable respirator.

For more information, refer to Section 8 of the SDS (safety data sheet).

Inhalation - minimum yield of 90%

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.2.15. Worker Exposure Control: Non-industrial spray application (PROC11)

Product features (article)

Covers concentrations up to 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 80%

Provide a basic level of general ventilation (3 to 5 air changes per hour).

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable gloves tested to EN374.

If skin contamination is expected to extend to other parts of the body, these parts should also be protected with impermeable clothing equivalent to that described for the hands.

For more information, refer to Section 8 of the SDS (safety data sheet).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.2.16. Worker Exposure Control: Non-industrial spray application (PROC11)

Product features (article)

Covers concentrations up to 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable gloves tested to EN374.

If skin contamination is expected to extend to other parts of the body, these parts should also be protected with impermeable clothing equivalent to that described for the hands.

For more information, refer to Section 8 of the SDS (safety data sheet).

Wear suitable respirator.

For more information, refer to Section 8 of the SDS (safety data sheet).

Inhalation - minimum yield of 90%

Other conditions affecting worker exposure

Indoor and outdoor use: Outdoor use

Temperature: Process temperature up to 40°C is assumed

9.2.17. Worker Exposure Control: Treatment of articles by dipping and pouring (PROC13)

Product features (article)

Covers concentrations up to 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a good standard of general ventilation (from 5 to 10 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.2.18. Worker Exposure Control: Treatment of articles by dipping and pouring (PROC13)

Product features (article)

Covers concentrations up to 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable respirator.

For more information, refer to Section 8 of the SDS (safety data sheet).

Inhalation - minimum yield of 90%

Other conditions affecting worker exposure

Indoor and outdoor use: Outdoor use

Temperature: Process temperature up to 40°C is assumed

9.2.19. Worker Exposure Control: Use as laboratory reagents (PROC15)

Product features (article)

Covers concentrations up to 100%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.2.20. Worker Exposure Control: Hand-mixing with direct contact and only PPE available (PROC19)

Product features (article)

Covers concentrations up to 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a good standard of general ventilation (from 5 to 10 air changes per hour).

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable gloves tested to EN374.

If skin contamination is expected to extend to other parts of the body, these parts should also be protected with impermeable clothing equivalent to that described for the hands.

For more information, refer to Section 8 of the SDS (safety data sheet).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.2.21. Worker Exposure Control: Hand-mixing with direct contact and only PPE available (PROC19)

Product features (article)

Covers concentrations up to 5 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable gloves tested to EN374.

If skin contamination is expected to extend to other parts of the body, these parts should also be protected with impermeable clothing equivalent to that described for the hands.

For more information, refer to Section 8 of the SDS (safety data sheet).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.3. EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

9.3.1. Environmental release and exposure: Wide dispersive use of non-reactive processing aid (no inclusion into the article, outdoor) (ERC8d)

Route release	Release rate	Method for estimating for release
water	0.014 kg/day	Estimated release factor
air	980 kg/day	Estimated release factor
Soil	0 kg/day	Estimated release factor

Protection target	Estimated exposure	RCR
Fresh water	0.000396 mg/l (EUSES v2.1)	< 0.01
freshwater sediments	0.00236 mg/kg dry weight (EUSES v2.1)	< 0.01
Sea water	0.0000597 mg/l (EUSES v2.1)	< 0.01
Marine sediment	0.000356 mg/kg dry weight (EUSES v2.1)	< 0.01
Sewage treatment plant	0.000805 mg/l (EUSES v2.1)	< 0.01
Farmland	0.000131 mg/kg dry weight (EUSES v2.1)	< 0.01
Prey for predators (freshwater)	0.011 mg/kg wet weight (EUSES v2.1)	< 0.01
Prey for predators (marine water)	0.00167 mg/kg wet weight (EUSES v2.1)	< 0.01
Main predator prey (marine water)	0.00158 mg/kg wet weight (EUSES v2.1)	< 0.01
Prey for Predators (Terrestrial)	0.000114 mg/kg wet weight (EUSES v2.1)	< 0.01

9.3.3. Worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	0.367 mg/m ³ (ECETOC TRA worker v3)	< 0.01
inhalation	systemic	Short term	1.468 mg/m ³ (ECETOC TRA worker v3)	< 0.01
inhalation	local	Long-term	0.367 mg/m ³ (ECETOC TRA worker v3)	< 0.01
inhalation	local	Short term	1.468 mg/m ³ (ECETOC TRA worker v3)	< 0.01
dermal	systemic	Long-term	0.034 mg/kg p.c./day (ECETOC TRA worker v3)	< 0.01
combined routes	systemic	Long-term	/	< 0.01

9.3.4. Worker exposure: Chemical production or refinery in closed process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	183.5 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	systemic	Short term	734.2 mg/m ³ (ECETOC TRA worker v3)	0.5
inhalation	local	Long-term	183.5 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	local	Short term	734.2 mg/m ³ (ECETOC TRA worker v3)	0.5
dermal	systemic	Long-term	1.37 mg/kg p.c./day (ECETOC TRA worker v3)	0.022
combined routes	systemic	Long-term	/	0.272

9.3.5. Worker exposure: Chemical production or refinery in closed process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	183.5 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	local	Short term	734.2 mg/m ³ (ECETOC TRA worker v3)	0.5
inhalation	local	Long-term	183.5 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	systemic	Short term	734.2 mg/m ³ (ECETOC TRA worker v3)	0.5
dermal	systemic	Long-term	1.37 mg/kg p.c./day (ECETOC TRA worker v3)	0.022
combined routes	systemic	Long-term	/	0.272

9.3.6. Worker exposure: Chemical production or formulation in closed batch processes, with occasional controlled exposure or processes with equivalent containment conditions (PROC3)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	256.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	systemic	Short term	1.03 g/m ³ (ECETOC TRA worker v3)	0.7
inhalation	local	Long-term	256.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	local	Short term	1.03 g/m ³ (ECETOC TRA worker v3)	0.7
dermal	systemic	Long-term	0.69 mg/kg p.c./day (ECETOC TRA worker v3)	0.011
combined routes	systemic	Long-term	/	0.361

9.3.7. Worker exposure: Production of chemicals with the possibility of exposure (PROC4)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	128.4 mg/m ³ (ECETOC TRA worker v3)	0.175
inhalation	systemic	Short term	513.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	local	Long-term	128.4 mg/m ³ (ECETOC TRA worker v3)	0.175
inhalation	local	Short term	513.9 mg/m ³ (ECETOC TRA worker v3)	0.35
dermal	systemic	Long-term	6.86 mg/kg p.c./day (ECETOC TRA worker v3)	0.109
combined routes	systemic	Long-term	/	0.284

9.3.8. Worker exposure: Production of chemicals with the possibility of exposure (PROC4)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	256.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	systemic	Short term	1.03 g/m ³ (ECETOC TRA worker v3)	0.7
inhalation	local	Long-term	256.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	local	Short term	1.03 g/m ³ (ECETOC TRA worker v3)	0.7
dermal	systemic	Long-term	6.86 mg/kg p.c./day (ECETOC TRA worker v3)	0.109
combined routes	systemic	Long-term	/	0.459

9.3.9. Worker exposure: Mixing or blending in batch processes (PROC5)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	256.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	systemic	Short term	1.03 g/m ³ (ECETOC TRA worker v3)	0.7
inhalation	local	Long-term	256.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	local	Short term	1.03 g/m ³ (ECETOC TRA worker v3)	0.7
dermal	systemic	Long-term	13.71 mg/kg p.c./day (ECETOC TRA worker v3)	0.218
combined routes	systemic	Long-term	/	0.568

9.3.10. Worker exposure: Mixing or blending in batch processes (PROC5)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	128.4 mg/m ³ (ECETOC TRA worker v3)	0.175
inhalation	systemic	Short term	513.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	local	Long-term	128.4 mg/m ³ (ECETOC TRA worker v3)	0.175
inhalation	local	Short term	513.9 mg/m ³ (ECETOC TRA worker v3)	0.35
dermal	systemic	Long-term	13.71 mg/kg p.c./day (ECETOC TRA worker v3)	0.218
combined routes	systemic	Long-term	/	0.393

9.3.11. Worker exposure: Transfer of a substance or a preparation (filling/emptying) at non-dedicated facilities (PROC8a)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	256.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	systemic	Short term	1.03 g/m ³ (ECETOC TRA worker v3)	0.7
inhalation	local	Long-term	256.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	local	Short term	1.03 g/m ³ (ECETOC TRA worker v3)	0.7
dermal	systemic	Long-term	13.71 mg/kg p.c./day (ECETOC TRA worker v3)	0.218
combined routes	systemic	Long-term	/	0.568

9.3.12. Worker exposure: Transfer of a substance or a mixture (charging/discharging) at dedicated facilities (PROC8b)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	367.1 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m ³ (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	367.1 mg/m ³ (ECETOC TRA worker v3)	0.25
dermal	systemic	Long-term	13.71 mg/kg p.c./day (ECETOC TRA worker v3)	0.218
combined routes	systemic	Long-term	/	0.343

9.3.13. Worker exposure: Application with rollers or brushes (PROC10)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	256.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	systemic	Short term	1.03 g/m ³ (ECETOC TRA worker v3)	0.7
inhalation	local	Long-term	256.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	local	Short term	1.03 g/m ³ (ECETOC TRA worker v3)	0.7
dermal	systemic	Long-term	27.43 mg/kg p.c./day (ECETOC TRA worker v3)	0.435
combined routes	systemic	Long-term	/	0.785

9.3.14. Worker exposure: Application with rollers or brushes (PROC10)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	128.4 mg/m ³ (ECETOC TRA worker v3)	0.175
inhalation	systemic	Short term	513.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	local	Long-term	128.4 mg/m ³ (ECETOC TRA worker v3)	0.175
inhalation	local	Short term	513.9 mg/m ³ (ECETOC TRA worker v3)	0.35
dermal	systemic	Long-term	27.43 mg/kg p.c./day (ECETOC TRA worker v3)	0.435
combined routes	systemic	Long-term	/	0.61

9.3.15. Worker exposure: Non-industrial spray application (PROC11)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	308.3 mg/m ³ (ECETOC TRA worker v3)	0.42
inhalation	systemic	Short term	mg/m ³ (ECETOC TRA worker v3)	0.84
inhalation	local	Long-term	308.3 mg/m ³ (ECETOC TRA worker v3)	0.42
inhalation	local	Short term	mg/m ³ (ECETOC TRA worker v3)	0.84
dermal	systemic	Long-term	12.85 mg/kg p.c./day (ECETOC TRA worker v3)	0.204
combined routes	systemic	Long-term	/	0.624

9.3.16. Worker exposure: Non-industrial spray application (PROC11)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	154.1 mg/m ³ (ECETOC TRA worker v3)	0.21
inhalation	systemic	Short term	616.7 mg/m ³ (ECETOC TRA worker v3)	0.42
inhalation	local	Long-term	154.1 mg/m ³ (ECETOC TRA worker v3)	0.21
inhalation	local	Short term	616.7 mg/m ³ (ECETOC TRA worker v3)	0.42
dermal	systemic	Long-term	12.85 mg/kg p.c./day (ECETOC TRA worker v3)	0.204
combined routes	systemic	Long-term	/	0.414

9.3.17. Worker exposure: Treatment of articles by dipping and pouring (PROC13)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	165.1 mg/m ³ (ECETOC TRA worker v3)	0.225
inhalation	systemic	Short term	660.7 mg/m ³ (ECETOC TRA worker v3)	0.45
inhalation	local	Long-term	165.1 mg/m ³ (ECETOC TRA worker v3)	0.225
inhalation	local	Short term	660.7 mg/m ³ (ECETOC TRA worker v3)	0.45
dermal	systemic	Long-term	8.226 mg/kg p.c./day (ECETOC TRA worker v3)	0.131
combined routes	systemic	Long-term	/	0.356

9.3.18. Worker exposure: Treatment of articles by dipping and pouring (PROC13)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	38.54 mg/m ³ (ECETOC TRA worker v3)	0.053
inhalation	systemic	Short term	154.1 mg/m ³ (ECETOC TRA worker v3)	0.105
inhalation	local	Long-term	38.54 mg/m ³ (ECETOC TRA worker v3)	0.053
inhalation	local	Short term	154.1 mg/m ³ (ECETOC TRA worker v3)	0.105
dermal	systemic	Long-term	8.226 mg/kg p.c./day (ECETOC TRA worker v3)	0.131
combined routes	systemic	Long-term	/	0.183

9.3.19. Worker exposure: Use as laboratory reagents (PROC15)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	183.5 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	systemic	Short term	734.2 mg/m ³ (ECETOC TRA worker v3)	0.5
inhalation	local	Long-term	183.5 mg/m ³ (ECETOC TRA worker v3)	0.25
inhalation	local	Short term	734.2 mg/m ³ (ECETOC TRA worker v3)	0.5
dermal	systemic	Long-term	0.34 mg/kg p.c./day (ECETOC TRA worker v3)	< 0.01
combined routes	systemic	Long-term	/	0.255

9.3.20. Worker exposure: Hand-mixing with direct contact and only PPE available (PROC19)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	330.3 mg/m ³ (ECETOC TRA worker v3)	0.45
inhalation	systemic	Short term	1.32 g/m ³ (ECETOC TRA worker v3)	0.9
inhalation	local	Long-term	330.3 mg/m ³ (ECETOC TRA worker v3)	0.45
inhalation	local	Short term	1.32 g/m ³ (ECETOC TRA worker v3)	0.9
dermal	systemic	Long-term	16.97 mg/kg p.c./day (ECETOC TRA worker v3)	0.269
combined routes	systemic	Long-term	/	0.72

9.3.21. Worker exposure: Hand-mixing with direct contact and only PPE available (PROC19)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	256.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	systemic	Short term	mg/m ³ (ECETOC TRA worker v3)	0.7
inhalation	local	Long-term	256.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	local	Short term	mg/m ³ (ECETOC TRA worker v3)	0.7
dermal	systemic	Long-term	5.657 mg/kg p.c./day (ECETOC TRA worker v3)	0.09
combined routes	systemic	Long-term	/	0.44

9.4. GUIDANCE FOR DOWNSTREAM USERS TO ASSESS WHETHER THEY COMPLY WITH THE LIMITS SET BY THE EXPOSURE SCENARIO

Guidance to check compliance with the exposure scenario: <https://echa.europa.eu/>

ES 12: USE IN DETERGENT PRODUCTS (GEST4_I, GEST4_P, GEST4_C).

12.1. WIDE DISPERSIVE USE BY PROFESSIONAL WORKERS

Environment

SC 1: Wide dispersive use of non-reactive processing aid (no inclusion into the article, indoors) ERC8a

Worker

SC 2: Filling of equipment from drums and containers, specialised site PROC8b

SC 3: Automated process with (semi) closed systems; Use in closed systems PROC2

SC 4: Automated process with (semi) closed systems Drum/batch transfers, Use in closed systems PROC3

SC 5: Semi-automatic process (e.g: Semi-automatic application of floor care and maintenance products) PROC4

SC 6: Filling of equipment from drums and containers, Outdoor use PROC8a

SC 7: Immersion, dipping and pouring, Manual, Surfaces, Cleaning PROC13

SC 8: Cleaning with low-pressure washers, Roller application or brushing, No spraying PROC10

SC 9: Cleaning with high pressure washers, Spraying, Indoor use PROC11

SC 10: Cleaning with high pressure washers Spraying, Outdoor use PROC11

SC 11: Application of cleaning products in closed systems, Manual, Surfaces, Cleaning PROC10

SC 12: Ad hoc manual application via trigger sprays, partial dipping, etc., Roller application or brushing PROC10

SC 13: Application of cleaning products in closed systems, Outdoor use PROC4

SC 14: Cleaning of medical devices PROC4

12.2. CONDITIONS OF USE THAT AFFECT EXPOSURE

12.2.1 Environmental exposure control: Wide dispersive use of non-reactive processing aid (no inclusion into the article, indoors) (ERC8a)

Organizational and technical measures and conditions

A wastewater treatment plant is expected.

Conditions and measures for waste treatment (including the article of waste)

Waste treatment: Dispose of waste products or used containers according to local regulations.

12.2.2. Worker Exposure Control: Transfer of a substance or a mixture (charging/discharging) at dedicated facilities (PROC8b)

Product features (article)

Covers concentrations up to 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a good standard of general ventilation (from 5 to 10 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

12.2.3. Worker Exposure Control: Chemical production or refinery in closed process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product features (article)

Covers concentrations up to 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

12.2.4. Worker Exposure Control: Chemical production or formulation in closed batch processes, with occasional controlled exposure or processes with equivalent containment conditions (PROC3)

Product features (article)

Covers concentrations up to 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

12.2.5. Worker Exposure Control: Production of chemicals with the possibility of exposure (PROC4)

Product features (article)

Covers concentrations up to 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a good standard of general ventilation (from 5 to 10 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

12.2.6. Worker Exposure Control: Transfer of a substance or a preparation (filling/emptying) at non-dedicated facilities (PROC8a)

Product features (article)

Covers concentrations up to 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable respirator.

For more information, refer to Section 8 of the SDS (safety data sheet).

Inhalation - minimum yield of 90%

Other conditions affecting worker exposure

Indoor and outdoor use: Outdoor use

Temperature: Process temperature up to 40°C is assumed

12.2.7. Worker Exposure Control: Treatment of articles by dipping and pouring (PROC13)

Product features (article)

Covers concentrations up to 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a good standard of general ventilation (from 5 to 10 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

12.2.8. Worker Exposure Control: Application with rollers or brushes (PROC10)

Product features (article)

Covers concentrations up to 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a good standard of general ventilation (from 5 to 10 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

12.2.9. Worker Exposure Control: Non-industrial spray application (PROC11)

Product features (article)

Covers concentrations up to 5 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Provide a good standard of general ventilation (from 5 to 10 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

12.2.10. Worker Exposure Control: Non-industrial spray application (PROC11)

Product features (article)

Covers concentrations up to 1%.

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable gloves tested to EN374.

If skin contamination is expected to extend to other parts of the body, these parts should also be protected with impermeable clothing equivalent to that described for the hands.

For more information, refer to Section 8 of the SDS (safety data sheet).

Other conditions affecting worker exposure

Indoor and outdoor use: Outdoor use

Temperature: Process temperature up to 40°C is assumed

12.2.11. Worker Exposure Control: Application with rollers or brushes (PROC10)

Product features (article)

Covers concentrations up to 5 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.12. Worker Exposure Control: Application with rollers or brushes (PROC10)

Product features (article)

Covers concentrations up to 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 80%

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

12.2.13. Worker Exposure Control: Production of chemicals with the possibility of exposure (PROC4)

Product features (article)

Covers concentrations up to 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable respirator.

For more information, refer to Section 8 of the SDS (safety data sheet).

Inhalation - minimum yield of 90%

Other conditions affecting worker exposure

Indoor and outdoor use: Outdoor use

Temperature: Process temperature up to 40°C is assumed

12.2.14. Worker Exposure Control: Production of chemicals with the possibility of exposure (PROC4)

Product features (article)

Covers concentrations up to 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Frequency of use: Covers use up to 8 h/day

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 80%

Provide a basic level of general ventilation (1 to 3 air changes per hour).

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

12.3. EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

12.3.1. Environmental release and exposure: Wide dispersive use of non-reactive processing aid (no inclusion into the article, indoors) (ERC8a)

Route release	Release rate	Method for estimating for release
water	0.014 kg/day	Environmental Release Category (ERC)
air	0.014 kg/day	Environmental Release Category (ERC)
Soil	0 kg/day	Environmental Release Category (ERC)

Protection target	Estimated exposure	RCR
Fresh water	0.000397 mg/l (EUSES v2.1)	< 0.01
freshwater sediments	0.00237 mg/kg dry weight (EUSES v2.1)	< 0.01
Sea water	0.0000598 mg/l (EUSES v2.1)	< 0.01
Marine sediment	0.000357 mg/kg dry weight (EUSES v2.1)	< 0.01
Sewage treatment plant	0.000811 mg/l (EUSES v2.1)	< 0.01
Farmland	0.000131 mg/kg dry weight (EUSES v2.1)	< 0.01
Prey for predators (freshwater)	0.011 mg/kg dry weight (EUSES v2.1)	< 0.01
Prey for predators (marine water)	0.00167 mg/kg dry weight (EUSES v2.1)	< 0.01
Main predator prey (marine water)	0.00158 mg/kg dry weight (EUSES v2.1)	< 0.01
Prey for Predators (Terrestrial)	0.000114 mg/kg dry weight (EUSES v2.1)	< 0.01

12.3.2. Worker exposure: Transfer of a substance or a mixture (charging/discharging) at dedicated facilities (PROC8b)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	165.1 mg/m ³ (ECETOC TRA worker v3)	0.225
inhalation	systemic	Short term	660.7 mg/m ³ (ECETOC TRA worker v3)	0.45
inhalation	local	Long-term	165.1 mg/m ³ (ECETOC TRA worker v3)	0.225
inhalation	local	Short term	660.7 mg/m ³ (ECETOC TRA worker v3)	0.45
dermal	systemic	Long-term	8.226 mg/kg p.c./day (ECETOC TRA worker v3)	0.131
combined routes	systemic	Long-term	/	0.356

12.3.3. Worker exposure: Chemical production or refinery in closed process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	110.1 mg/m ³ (ECETOC TRA worker v3)	0.15
inhalation	local	Long-term	110.1 mg/m ³ (ECETOC TRA worker v3)	0.15
inhalation	local	Short term	440.5 mg/m ³ (ECETOC TRA worker v3)	0.3
inhalation	systemic	Short term	440.5 mg/m ³ (ECETOC TRA worker v3)	0.3
dermal	systemic	Long-term	0.822 mg/kg p.c./day (ECETOC TRA worker v3)	0.013
combined routes	systemic	Long-term	/	0.163

12.3.4. Worker exposure: Chemical production or formulation in closed batch processes, with occasional controlled exposure or processes with equivalent containment conditions (PROC3)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	220.2 mg/m ³ (ECETOC TRA worker v3)	0.3
inhalation	systemic	Short term	881.0 mg/m ³ (ECETOC TRA worker v3)	0.6
inhalation	local	Long-term	220.2 mg/m ³ (ECETOC TRA worker v3)	0.3
inhalation	local	Short term	881.0 mg/m ³ (ECETOC TRA worker v3)	0.6
dermal	systemic	Long-term	0.414 mg/kg p.c./day (ECETOC TRA worker v3)	< 0.01
combined routes	systemic	Long-term	/	0.307

12.3.5. Worker exposure: Production of chemicals with the possibility of exposure (PROC4)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	165.1 mg/m ³ (ECETOC TRA worker v3)	0.225
inhalation	systemic	Short term	660.7 mg/m ³ (ECETOC TRA worker v3)	0.45
inhalation	local	Long-term	165.1 mg/m ³ (ECETOC TRA worker v3)	0.225
inhalation	local	Short term	660.7 mg/m ³ (ECETOC TRA worker v3)	0.45
dermal	systemic	Long-term	4.116 mg/kg p.c./day (ECETOC TRA worker v3)	0.065
combined routes	systemic	Long-term	/	0.29

12.3.6. Worker exposure: Transfer of substance or preparation (charging/discharging) at non dedicated facilities (PROC8a)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	77.09 mg/m ³ (ECETOC TRA worker v3)	0.105
inhalation	systemic	Short term	308.3 mg/m ³ (ECETOC TRA worker v3)	0.21
inhalation	local	Long-term	77.09 mg/m ³ (ECETOC TRA worker v3)	0.105
inhalation	local	Short term	308.3 mg/m ³ (ECETOC TRA worker v3)	0.21
dermal	systemic	Long-term	8.226 mg/kg p.c./day (ECETOC TRA worker v3)	0.131
combined routes	systemic	Long-term	/	0.236

12.3.7. Worker exposure: Treatment of articles by dipping and pouring (PROC13)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	165.1 mg/m ³ (ECETOC TRA worker v3)	0.225
inhalation	systemic	Short term	660.7 mg/m ³ (ECETOC TRA worker v3)	0.45
inhalation	local	Long-term	165.1 mg/m ³ (ECETOC TRA worker v3)	0.225
inhalation	local	Short term	660.7 mg/m ³ (ECETOC TRA worker v3)	0.45
dermal	systemic	Long-term	8.226 mg/kg p.c./day (ECETOC TRA worker v3)	0.131
combined routes	systemic	Long-term	/	0.356

12.3.8. Worker exposure: Application with rollers or brushes (PROC10)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	330.3 mg/m ³ (ECETOC TRA worker v3)	0.45
inhalation	systemic	Short term	mg/m ³ (ECETOC TRA worker v3)	0.9
inhalation	local	Long-term	330.3 mg/m ³ (ECETOC TRA worker v3)	0.45
inhalation	local	Short term	mg/m ³ (ECETOC TRA worker v3)	0.9
dermal	systemic	Long-term	16.45 mg/kg p.c./day (ECETOC TRA worker v3)	0.261
combined routes	systemic	Long-term	/	0.711

12.3.9. Worker exposure: Non-industrial spray application (PROC11)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	220.2 mg/m ³ (ECETOC TRA worker v3)	0.3
inhalation	systemic	Short term	881.0 mg/m ³ (ECETOC TRA worker v3)	0.6
inhalation	local	Long-term	220.2 mg/m ³ (ECETOC TRA worker v3)	0.3
inhalation	local	Short term	881.0 mg/m ³ (ECETOC TRA worker v3)	0.6
dermal	systemic	Long-term	21.42 mg/kg p.c./day (ECETOC TRA worker v3)	0.34
combined routes	systemic	Long-term	/	0.64

12.3.10. Worker exposure: Non-industrial spray application (PROC11)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	256.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	systemic	Short term	1.03 g/m ³ (ECETOC TRA worker v3)	0.7
inhalation	local	Long-term	256.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	local	Short term	1.03 g/m ³ (ECETOC TRA worker v3)	0.7
dermal	systemic	Long-term	2.143 mg/kg p.c./day (ECETOC TRA worker v3)	0.034
combined routes	systemic	Long-term	/	0.384

12.3.11. Worker exposure: Application with rollers or brushes (PROC10)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	256.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	systemic	Short term	1.03 g/m ³ (ECETOC TRA worker v3)	0.7
inhalation	local	Long-term	256.9 mg/m ³ (ECETOC TRA worker v3)	0.35
inhalation	local	Short term	1.03 g/m ³ (ECETOC TRA worker v3)	0.7
dermal	systemic	Long-term	5.486 mg/kg p.c./day (ECETOC TRA worker v3)	0.087
combined routes	systemic	Long-term	/	0.437

12.3.12. Worker exposure: Application with rollers or brushes (PROC10)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	220.2 mg/m ³ (ECETOC TRA worker v3)	0.3
inhalation	systemic	Short term	881.0 mg/m ³ (ECETOC TRA worker v3)	0.6
inhalation	local	Long-term	220.2 mg/m ³ (ECETOC TRA worker v3)	0.3
inhalation	local	Short term	881.0 mg/m ³ (ECETOC TRA worker v3)	0.6
dermal	systemic	Long-term	16.45 mg/kg p.c./day (ECETOC TRA worker v3)	0.261
combined routes	systemic	Long-term	/	0.561

12.3.13. Worker exposure: Production of chemicals with the possibility of exposure (PROC4)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	38.54 mg/m ³ (ECETOC TRA worker v3)	0.053
inhalation	systemic	Short term	154.1 mg/m ³ (ECETOC TRA worker v3)	0.105
inhalation	local	Long-term	38.54 mg/m ³ (ECETOC TRA worker v3)	0.053
inhalation	local	Short term	154.1 mg/m ³ (ECETOC TRA worker v3)	0.105
dermal	systemic	Long-term	4.116 mg/kg p.c./day (ECETOC TRA worker v3)	0.065
combined routes	systemic	Long-term	/	0.118

12.3.14. Worker exposure: Production of chemicals with the possibility of exposure (PROC4)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	110.1 mg/m ³ (ECETOC TRA worker v3)	0.15
inhalation	systemic	Short term	440.5 mg/m ³ (ECETOC TRA worker v3)	0.3
inhalation	local	Long-term	110.1 mg/m ³ (ECETOC TRA worker v3)	0.15
inhalation	local	Short term	440.5 mg/m ³ (ECETOC TRA worker v3)	0.3
dermal	systemic	Long-term	4.116 mg/kg p.c./day (ECETOC TRA worker v3)	0.065
combined routes	systemic	Long-term	/	0.215

12.4. GUIDANCE FOR DOWNSTREAM USERS TO ASSESS WHETHER THEY COMPLY WITH THE LIMITS SET BY THE EXPOSURE SCENARIO

Guidance to check compliance with the exposure scenario: <https://echa.europa.eu/>

n-butyl acetate

Substance identification

Chemical Name: n-butyl acetate

CAS number: 123-86-4

Date - Version: 07/06/2017 10.0

1. USE IN COATINGS. USE IN PAINTS. USE IN PRINTING INKS. USE IN ADHESIVES.

Short title of the exposure scenario: Use in coatings. Use in paints. Use in printing inks. Use in adhesives.
SU3; ERC4; PROC7, PROC10, PROC13

EXPOSURE CONTROL AND RISK MANAGEMENT MEASURES

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: CEPE SPERC4.1a.v1

Operating conditions

Yearly amount used in EU: 5,000,000 kgs

Minimum emission days per year: 225

Emission factor to air: 0.8%

Emission factor in water: 2%

Emission factor in soil: 0%

Receiving surface water (flow rate): 18,000 m³/day

Freshwater dilution factor: 10

Marine water dilution factor: 100

Risk management measures

Suitable measures to reduce emissions to air can be: Exhaust gas treatment with thermal oxidation.

Type of treatment plant: Municipal sewage treatment plant.

Assumed sewage treatment plant flow: 2,000 m³/day

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Environment

Risk Characterization Ratio (RCR): 0.925355

Risk from environmental exposure is driven by soil.

Maximum safe use amount: 1080.7 kg/day

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC7: Industrial spray application

Area of use: Industrial

Operating conditions

Substance concentration: n-butyl acetate content: ≥ 0 - $\leq 100\%$

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

Duration and frequency of application: 480 mins. 5 days a week

Indoor/Outdoor: Internal use

Risk management measures

Wear chemically resistant gloves in combination with “basic” employee training. Effectiveness: 90%
Minimize manual tasks.
Daily general cleaning of equipment and work area.
Regular inspection and maintenance of equipment and machinery.
Ensure that the activity is performed outside the operator’s respiratory zone (head-product distance greater than 1m).
Avoid frequent and direct contact with the substance.
Check that risk reduction measures are implemented and that the conditions of use are respected.
Avoid splashes.
Make sure the spray booth is used.
Wear suitable clothing.

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Worker - dermal, long-term - systemic.
Exposure estimation: 4.2857 mg/kg/day (body weight)
Risk Characterization Ratio (RCR): 0.38961
Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Operator - inhalation, long-term - local.
Exposure estimation: 0.0001 mg/m³
Risk Characterization Ratio (RCR): 0.000001

Guidance for downstream users

For a comparison term, visit <http://www.ecetoc.org/tra> Please note that a revised version was used (see exposure estimates).

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC10: Application with rollers or brushes

Area of use: Industrial

Operating conditions

Substance concentration: n-butyl acetate content: ≥ 0 - $\leq 100\%$
Physical state: liquid
Vapor pressure of the substance during use: 1120Pa
Process temperature: 20°C
Duration and frequency of application: 480 mins. 5 days a week
Indoor/Outdoor: Internal use

Risk management measures

Forced local ventilation. Effectiveness: 90%
Wear chemically resistant gloves in combination with “basic” employee training. Effectiveness: 90%

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Worker - dermal, long-term - systemic.
Exposure estimation: 2.7429 mg/kg/day (body weight)
Risk Characterization Ratio (RCR): 0.249351
Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Operator - inhalation, long-term - local.
Exposure estimation: 24.1996 mg/m³
Risk Characterization Ratio (RCR): 0.080665

Guidance for downstream users

For a comparison term, visit <http://www.ecetoc.org/tra>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC13: Treatment of articles by dipping and pouring

Area of use: Industrial

Operating conditions

Substance concentration: n-butyl acetate content: ≥ 0 - $\leq 100\%$

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

Duration and frequency of application: 480 mins. 5 days a week

Indoor/Outdoor: Internal use

Risk management measures

Forced local ventilation. Effectiveness: 90%

Wear chemically resistant gloves in combination with "basic" employee training. Effectiveness: 90%

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Worker - dermal, long-term - systemic.

Exposure estimation: 1.3714 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.124675

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Operator - inhalation, long-term - local.

Exposure estimation: 24.1996 mg/m³

Risk Characterization Ratio (RCR): 0.080665

Guidance for downstream users

For a comparison term, visit <http://www.ecetoc.org/tra>

2. USE IN COATINGS. USE IN PAINTS. USE IN PRINTING INKS. USE IN ADHESIVES.

Short title of the exposure scenario: Use in coatings. Use in paints. Use in printing inks. Use in adhesives. SU3; ERC4; PROC7, PROC10, PROC13

EXPOSURE CONTROL AND RISK MANAGEMENT MEASURES

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: CEPE SPERC4.1a.v1

Operating conditions

Yearly amount used in EU: 43,000,000 kgs

Minimum emission days per year: 225

Emission factor to air: 0.8%

Emission factor in water: 2%

Emission factor in soil: 0%

Receiving surface water (flow rate): 18,000 m³/day

Freshwater dilution factor: 10

Marine water dilution factor: 100

Risk management measures

Suitable measures to reduce emissions to air can be: Exhaust gas treatment with thermal oxidation.

Type of treatment plant: Municipal sewage treatment plant.

Assumed sewage treatment plant flow: 2,000 m³/day

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Environment

Risk Characterization Ratio (RCR): 0.925355

Risk from environmental exposure is driven by soil.

Maximum safe use amount: 1080.7 kg/day

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC7: Industrial spray application

Area of use: Industrial

Operating conditions

Substance concentration: n-butyl acetate content: ≥0 - ≤100%

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

Duration and frequency of application: 480 mins. 5 days a week

Indoor/Outdoor: Internal use

Risk management measures

Wear chemically resistant gloves in combination with "basic" employee training. Effectiveness: 90%

Minimize manual tasks.

Daily general cleaning of equipment and work area.

Regular inspection and maintenance of equipment and machinery.

Ensure that the activity is performed outside the operator's respiratory zone (head-product distance greater than 1m).

Avoid frequent and direct contact with the substance.

Check that risk reduction measures are implemented and that the conditions of use are respected.

Avoid splashes.

Make sure the spray booth is used.

Wear suitable clothing.

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Worker - dermal, long-term - systemic.

Exposure estimation: 4.2857 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.38961

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Operator - inhalation, long-term - local.
Exposure estimation: 0.0001 mg/m³
Risk Characterization Ratio (RCR): 0.000001

Guidance for downstream users

For a comparison term, visit <http://www.ecetoc.org/tra> Please note that a revised version was used (see exposure estimates).

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC10: Application with rollers or brushes

Area of use: Industrial

Operating conditions

Substance concentration: n-butyl acetate content: ≥0 - ≤100%

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

Duration and frequency of application: 480 mins. 5 days a week

Indoor/Outdoor: Internal use

Risk management measures

Forced local ventilation. Effectiveness: 90%

Wear chemically resistant gloves in combination with “basic” employee training. Effectiveness: 90%

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Worker - dermal, long-term - systemic.

Exposure estimation: 2.7429 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.249351

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Operator - inhalation, long-term - local.

Exposure estimation: 24.1996 mg/m³

Risk Characterization Ratio (RCR): 0.080665

Guidance for downstream users

For a comparison term, visit <http://www.ecetoc.org/tra>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC13: Treatment of articles by dipping and pouring

Area of use: Industrial

Operating conditions

Substance concentration: n-butyl acetate content: ≥0 - ≤100%

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

Duration and frequency of application: 480 mins. 5 days a week

Indoor/Outdoor: Internal use

Risk management measures

Forced local ventilation. Effectiveness: 90%

Wear chemically resistant gloves in combination with “basic” employee training. Effectiveness: 90%

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Worker - dermal, long-term - systemic.

Exposure estimation: 1.3714 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.124675

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Operator - inhalation, long-term - local.

Exposure estimation: 24.1996 mg/m³

Risk Characterization Ratio (RCR): 0.080665

Guidance for downstream users

For a comparison term, visit <http://www.ecetoc.org/tra>

3. USE IN COATINGS. USE IN PAINTS. USE IN PRINTING INKS. USE IN ADHESIVES.

Short title of the exposure scenario: Use in coatings. Use in paints. Use in printing inks. Use in adhesives. SU22; ERC8a, ERC8d; PROC10, PROC11, PROC13, PROC19

EXPOSURE CONTROL AND RISK MANAGEMENT MEASURES

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: CEPE SPERC 8a.2a.v1

Operating conditions

Yearly amount used in EU: 2,000,000 kgs

Minimum emission days per year: 225

Emission factor to air: 99%

Emission factor in water: 1%

Emission factor in soil: 0%

Receiving surface water (flow rate): 18,000 m³/day

Freshwater dilution factor: 10

Marine water dilution factor: 100

Risk management measures

The wastewater treatment measures considered suitable are, for example, wastewater or sewage treatment plant.

Type of treatment plant: Municipal sewage treatment plant.

Assumed sewage treatment plant flow: 2,000 m³/day

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Environment

Risk Characterization Ratio (RCR): 0.012923

Risk from environmental exposure is driven by freshwater sediment.

Maximum safe use amount: 1934.6 kg/giorno

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: CEPE SPERC 8d.3a.v1

Operating conditions

Yearly amount used in EU: 2,000,000 kgs

Minimum emission days per year: 225

Emission factor to air: 98%

Emission factor in water: 2%

Emission factor in soil: 0%

Receiving surface water (flow rate): 18,000 m³/day

Freshwater dilution factor: 10

Marine water dilution factor: 100

Risk management measures

Type of treatment plant: Municipal sewage treatment plant.

Assumed sewage treatment plant flow: 2,000 m³/day

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Environment

Risk Characterization Ratio (RCR): 0.092422

Risk from environmental exposure is driven by soil.

Maximum safe use amount: 1082 kg/day

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC10: Application with rollers or brushes

Area of use: Professional

Operating conditions

Substance concentration: n-butyl acetate content: $\geq 0 - \leq 100\%$

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

Duration and frequency of application: 480 mins. 5 days a week

Indoor/Outdoor: Internal use

Risk management measures

Provide a good standard of general or controlled ventilation (5 to 10 air changes per hour). Effectiveness: 70%

Wear chemically resistant gloves in combination with "basic" employee training. Effectiveness: 90%

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Worker - dermal, long-term - systemic.

Exposure estimation: 2.7429 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.249351

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Operator - inhalation, long-term - local.

Exposure estimation: 145.1979 mg/m³

Risk Characterization Ratio (RCR): 0.483993

Guidance for downstream users

For a comparison term, visit <http://www.ecetoc.org/tra>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC11: Non-industrial spray application

Area of use: Professional

Operating conditions

Substance concentration: n-butyl acetate content: $\geq 0 - \leq 45\%$

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

Duration and frequency of application: 480 mins. 5 days a week

Indoor/Outdoor: Internal use

Risk management measures

Wear chemically resistant gloves in combination with "basic" employee training. Effectiveness: 90%

Minimize manual tasks.

Daily general cleaning of equipment and work area.

Regular inspection and maintenance of equipment and machinery.

Ensure that the activity is performed outside the operator's respiratory zone (head-product distance greater than 1m).

Avoid frequent and direct contact with the substance.

Check that risk reduction measures are implemented and that the conditions of use are respected.

Avoid splashes.

Make sure the spray booth is used.

Wear suitable clothing.

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Worker - dermal, long-term - systemic.

Exposure estimation: 10.7143 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.974026

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Operator - inhalation, long-term - local.

Exposure estimation: 0.0001 mg/m³

Risk Characterization Ratio (RCR): 0.000001

Guidance for downstream users

For a comparison term, visit <http://www.ecetoc.org/tra> Please note that a revised version was used (see exposure estimates).

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC11: Non-industrial spray application

Area of use: Professional

Operating conditions

Substance concentration: n-butyl acetate content: ≥ 0 - $\leq 45\%$

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

Duration and frequency of application: 480 mins. 5 days a week

Indoor/Outdoor: Internal use

Risk management measures

Wear chemically resistant gloves in combination with "basic" employee training. Effectiveness: 90%

Minimize manual tasks.

Avoid frequent and direct contact with the substance.

Check that risk reduction measures are implemented and that the conditions of use are respected.

Daily general cleaning of equipment and work area.

Regular control and maintenance of equipment and machinery.

Make sure doors and windows are open (general ventilation).

Avoid splashes.

Use an adequately effective local ventilation system.

Wear suitable clothing.

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker, modified version. The concentration of the substance has been considered using a linear approach. Worker - dermal, long-term - systemic.

Exposure estimation: 4.8214 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.438312

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker, modified version. Operator - inhalation, long-term - local.

Exposure estimation: 153 mg/m³

Risk Characterization Ratio (RCR): 0.51

Guidance for downstream users

For a comparison term, visit <http://www.ecetoc.org/tra> Please note that a revised version was used (see exposure estimates).

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC11: Non-industrial spray application

Area of use: Professional

Operating conditions

Substance concentration: n-butyl acetate content: ≥ 0 - $\leq 100\%$

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

Duration and frequency of application: 480 mins. 5 days a week

Indoor/Outdoor: Internal use

Risk management measures

Wear chemically resistant gloves in combination with "basic" employee training. Effectiveness: 90%

Minimize manual tasks.

Avoid frequent and direct contact with the substance.

Check that risk reduction measures are implemented and that the conditions of use are respected.

Daily general cleaning of equipment and work area.

Regular inspection and maintenance of equipment and machinery.

Avoid splashes.

Make sure doors and windows are open (general ventilation).

Wear a half face mask with a P2L filter or better.

Wear suitable clothing.

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker, modified version. The concentration of the substance has been considered using a linear approach. Worker - dermal, long-term - systemic.

Exposure estimation: 4.8214 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.438312

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker, modified version. Operator - inhalation, long-term - local.

Exposure estimation: 116 mg/m³

Risk Characterization Ratio (RCR): 0.386667

Guidance for downstream users

For a comparison term, visit <http://www.ecetoc.org/tra> Please note that a revised version was used (see exposure estimates).

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC13: Treatment of articles by dipping and pouring

Area of use: Professional

Operating conditions

Substance concentration: n-butyl acetate content: ≥0 - ≤100%

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

Duration and frequency of application: 480 mins. 5 days a week

Indoor/Outdoor: Internal use

Risk management measures

Provide a good standard of general or controlled ventilation (5 to 10 air changes per hour). Effectiveness: 70%

Wear chemically resistant gloves in combination with "basic" employee training. Effectiveness: 90%

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Worker - dermal, long-term - systemic.

Exposure estimation: 1.3714 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.124675

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Operator - inhalation, long-term - local.

Exposure estimation: 145.1979 mg/m³

Risk Characterization Ratio (RCR): 0.483993

Guidance for downstream users

For a comparison term, visit <http://www.ecetoc.org/tra>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC19: Manual mixing with direct contact with the only use of personal protective equipment

Area of use: Professional

Operating conditions

Substance concentration: n-butyl acetate content: ≥0 - ≤100%

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

Duration and frequency of application: 240 mins. 5 days a week

Indoor/Outdoor: Internal use

Risk management measures

Forced local ventilation: Effectiveness: 80%

Wear chemically resistant gloves in combination with "basic" employee training. Effectiveness: 90%

Ensure a good standard of general or controlled ventilation (no less than 3-5 air changes per hour). Effectiveness: 30%

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Worker - dermal, long-term - systemic.

Exposure estimation: 8.4857 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.771429

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Operator - inhalation, long-term - local.

Exposure estimation: 67.759 mg/m³

Risk Characterization Ratio (RCR): 0.225863

Guidance for downstream users

For a comparison term, visit <http://www.ecetoc.org/tra>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC19: Manual mixing with direct contact with the only use of personal protective equipment

Area of use: Professional

Operating conditions

Substance concentration: n-butyl acetate content: ≥0 - ≤100%

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

Duration and frequency of application: 60 mins. 5 days a week

Indoor/Outdoor: Internal use

Risk management measures

Provide a good standard of general or controlled ventilation (5 to 10 air changes per hour). Effectiveness: 70%

Wear chemically resistant gloves in combination with "basic" employee training. Effectiveness: 90%

Exposure estimation and reference to its source

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Worker - dermal, long-term - systemic.

Exposure estimation: 2.8286 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.257143

Evaluation method: EASY TRA v4.1, ECETOC TRA v3.0, Worker. Operator - inhalation, long-term - local.

Exposure estimation: 145.1979 mg/m³

Risk Characterization Ratio (RCR): 0.483993

Guidance for downstream users

For a comparison term, visit <http://www.ecetoc.org/tra>