

**Ficha de datos de seguridad****DILUENTE ADW**

Ficha de datos de seguridad del 12/06/2023 Revisión 1

Atención: la numeración comienza desde 1.

**SECCIÓN 1. Identificación de la sustancia o la mezcla y de la sociedad o la empresa****1.1. Identificador de producto**

Identificación del preparado:

Nombre comercial: DILUENTE ADW

Código comercial: 583K

UFI: D2M1-00XS-S00R-AKV1

**1.2. Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados**

Uso recomendado: Diluyente

**1.3. Datos del proveedor de la ficha de datos de seguridad**

Proveedor: FASSA Srl

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

Tel. +39 0422 7222

Fax +39 0422 887509

Responsable: laboratorio.spresiano@fassabortolo.it

**1.4. Teléfono de emergencia**

+34 91 562 04 20

**SECCIÓN 2. Identificación de los peligros****2.1. Clasificación de la sustancia o de la mezcla****Reglamento (CE) n. 1272/2008 (CLP)**

Flam. Liq. 2 Líquido y vapores muy inflamables.

Eye Irrit. 2 Provoca irritación ocular grave.

STOT SE 3 Puede provocar somnolencia o vértigo.

Efectos físico-químicos nocivos para la salud humana y para el medio ambiente:

Ningún otro riesgo

**2.2. Elementos de la etiqueta****Reglamento (CE) n. 1272/2008 (CLP)****Pictogramas de peligro y palabra de advertencia**

Peligro

**Indicaciones de peligro**

H225 Líquido y vapores muy inflamables.

H319 Provoca irritación ocular grave.

H336 Puede provocar somnolencia o vértigo.

**Consejos de prudencia**

P210 Mantener alejado del calor, de superficies calientes, de chispas, de llamas abiertas y de cualquier otra fuente de ignición. No fumar.

P233 Mantener el recipiente herméticamente cerrado.

P261 Evitar respirar el humo/el gas/la niebla/los vapores/el aerosol.

P280 Llevar guantes, gafas y máscara de protección.

P312 Llamar a un CENTRO DE TOXICOLOGÍA / médico si la persona se encuentra mal.

P370+P378 En caso de incendio: Utilizar un extintor de polvo para la extinción.

P403+P235 Almacenar en un lugar bien ventilado. Mantener en lugar fresco.

**Disposiciones especiales:**

EUH066 La exposición repetida puede provocar sequedad o formación de grietas en la piel.

**Contiene:**

Acetato de etilo  
acetato de n-butilo

**Disposiciones especiales de acuerdo con el anexo XVII del Reglamento REACH y sus posteriores modificaciones:**

Ninguno

**2.3. Otros peligros**

Ninguna sustancia PBT, mPmB o perturbador endocrino presente en concentración  $\geq 0.1\%$

Ningún otro riesgo

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**SECCIÓN 3. Composición/información sobre los componentes****3.1. Sustancias**

N.A.

**3.2. Mezclas**

Identificación del preparado: DILUENTE ADW

**Componentes peligrosos según el Reglamento CLP y su correspondiente clasificación:**

Cantidad	Nombre	Núm. Ident.	Clasificación	Número de registro
$\geq 80\%$	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

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**SECCIÓN 4. Primeros auxilios****4.1. Descripción de los primeros auxilios**

En caso de contacto con la piel:

Quitarse de inmediato la indumentaria contaminada y eliminarla de manera segura.

Lavar inmediatamente con abundante agua corriente y eventualmente jabón las zonas del cuerpo que han entrado en contacto con el producto, incluso si fuera sólo una sospecha.

Lavar completamente el cuerpo (ducha o baño).

En caso de contacto con los ojos:

En caso de contacto con los ojos, enjuagarlos con agua durante un tiempo adecuado y manteniendo los párpados abiertos, luego consultar de inmediato con un oftalmólogo.

Proteger el ojo ileso.

En caso de ingestión:

No inducir el vómito, consultar con un médico presentando la FDS (Ficha de Datos de Seguridad) y la etiqueta de productos peligrosos

En caso de inhalación:

Llevar al accidentado al aire libre y mantenerlo en reposo y abrigado.

**4.2. Principales síntomas y efectos, agudos y retardados**

Los síntomas y los efectos son como se espera de los peligros según las indicaciones de la sección 2.

**4.3. Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente**

En caso de accidente o malestar, consultar de inmediato con un médico (si es posible mostrarle las instrucciones de uso o la ficha de seguridad)

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**SECCIÓN 5. Medidas de lucha contra incendios****5.1. Medios de extinción**

Medios de extinción apropiados:

En caso de incendio: Utilizar un extintor de polvo para la extinción.

CO<sub>2</sub>, extintores de polvo, espuma, agua nebulizada.

Medios de extinción que no se deben utilizar por motivos de seguridad:

Agua en chorros.

**5.2. Peligros específicos derivados de la sustancia o la mezcla**

La combustión produce humo pesado.

No inhalar los gases producidos por la explosión y/o la combustión (monóxido y dióxido de carbono, óxidos de nitrógeno).

Los vapores pueden formar mezclas explosivas con el aire.

**5.3. Recomendaciones para el personal de lucha contra incendios**

Utilizar equipos respiratorios apropiados.

Recoger por separado el agua contaminada utilizada para extinguir el incendio. No descargarla en la red de alcantarillado.

Si es posible, desde el punto de vista de la seguridad, retirar de inmediato del área los contenedores no dañados.

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## SECCIÓN 6. Medidas en caso de vertido accidental

### 6.1. Precauciones personales, equipo de protección y procedimientos de emergencia

Usar los dispositivos de protección individual.

Quitar toda fuente de encendido.

Llevar las personas a un lugar seguro.

Consultar las medidas de protección expuestas en los puntos 7 y 8.

### 6.2. Precauciones relativas al medio ambiente

Evitar que el producto penetre en el suelo/subsuelo. Evitar que penetre en aguas superficiales o en el alcantarillado.

En caso de fuga de gas o penetración en cursos de agua, suelo o sistema de alcantarillado, informar a las autoridades responsables.

### 6.3. Métodos y material de contención y de limpieza

Material idóneo para la recogida: material absorbente inerte (por ejemplo, arena, vermiculita).

Conservar el agua de lavado contaminada y eliminarla.

### 6.4. Referencia a otras secciones

Véanse también los apartados 8 y 13.

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## SECCIÓN 7. Manipulación y almacenamiento

### 7.1. Precauciones para una manipulación segura

Evitar el contacto con la piel y ojos, la inhalación de vapores y nieblas.

No utilizar contenedores vacíos que no hayan sido previamente limpiados.

Antes de realizar las operaciones de transferencia, asegurarse de que en los contenedores no haya materiales residuos incompatibles.

Recomendaciones sobre medidas generales de higiene en el trabajo:

La indumentaria contaminada debe ser sustituida antes de acceder a las áreas de almuerzo.

No comer ni beber durante el trabajo.

Remitirse también al apartado 8 para los dispositivos de protección recomendados.

### 7.2. Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades

Conservar los recipientes bien cerrados en un lugar fresco y ventilado, lejos de fuentes de calor.

Manténgase alejado de llamas libres, chispas y fuentes de calor. Evite la exposición directa al sol.

Mantener alejado de comidas, bebidas y piensos.

Materias incompatibles:

Ver punto 10.5

Indicaciones para los locales:

Frescos y adecuadamente aireados.

### 7.3. Usos específicos finales

Recomendaciones

Ver punto 1.2

Soluciones específicas para el sector industrial

Ningún uso particular

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## SECCIÓN 8. Controles de exposición/protección individual

### 8.1. Parámetros de control

Lista de los componentes en la fórmula con un valor OEL.

	Tipo OEL	país	Largo plazo mg/m3	Largo Plazo ppm	Corto plazo mg/m3	Corto plazo ppm	Nota
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		

**Lista de los componentes contenidos en la fórmula con valor PNEC (nivel ningún efecto previsto)**

	<b>Límite PNEC</b>	<b>Vía de exposición</b>	<b>Frecuencia de exposición</b>	<b>Notas</b>
Acetato de etilo CAS: 141-78-6	0.024 mg/l	Agua marina		
	0.24 mg/l	agua dulce		
	0.115 mg/kg	Sedimentos de agua marina		
	1.15 mg/kg	Sedimentos de agua dulce		
	650 mg/l	Microorganismos en aguas residuales (STP)		
	0.148 mg/kg	Suelo (agricultura)		
acetato de n-butilo CAS: 123-86-4	0.018 mg/l	Agua marina		
	0.18 mg/l	agua dulce		
	0.098 mg/kg	Sedimentos de agua marina		
	0.981 mg/kg	Sedimentos de agua dulce		

35.6 Microorganismos  
mg/l en aguas  
residuales (STP)

0.09 Suelo  
mg/kg (agricultura)

### Nivel sin efecto derivado. (DNEL)

	Trabajador profesional	Trabajador	Consumidor	Vía de exposición	Frecuencia de exposición	Notas
Acetato de etilo CAS: 141-78-6		734 mg/m3	367 mg/m3	Por inhalación humana	A largo plazo, efectos sistémicos	
		734 mg/m3	367 mg/m3	Por inhalación humana	A largo plazo, efectos locales	
		1468 mg/m3	734 mg/m3	Por inhalación humana	A corto plazo, efectos sistémicos	
		1468 mg/m3	734 mg/m3	Por inhalación humana	A corto plazo, efectos locales	
		63 mg/kg	37 mg/kg	Dérmica humana	A largo plazo, efectos sistémicos	
acetato de n-butilo CAS: 123-86-4			4.5 mg/kg	Oral humana	A largo plazo, efectos sistémicos	
		300 mg/m3	35.7 mg/m3	Por inhalación humana	A largo plazo, efectos sistémicos	
		600 mg/m3	300 mg/m3	Por inhalación humana	A corto plazo, efectos sistémicos	
		300 mg/m3	35.7 mg/m3	Por inhalación humana	A largo plazo, efectos locales	
		600 mg/m3	300 mg/m3	Por inhalación humana	A corto plazo, efectos locales	
		11 mg/kg	6 mg/kg	Dérmica humana	A largo plazo, efectos sistémicos	
		11 mg/kg	6 mg/kg	Dérmica humana	A corto plazo, efectos sistémicos	
			2 mg/kg	Oral humana	A corto plazo, efectos sistémicos	
		2 mg/kg	Oral humana	A largo plazo, efectos sistémicos		

### 8.2. Controles de la exposición

Procurar una ventilación adecuada. Cuando sea razonablemente factible, esto se puede lograr mediante el uso de ventilación de aire de cambio y una buena aspiración general.

Protección de los ojos:

Gafas con protección lateral (EN 166).

Protección de la piel:

El personal debe usar ropa antiestática hecha de fibra natural o fibra sintética resistente a altas temperaturas.

Protección de las manos:

No existe un material o una combinación de materiales para guantes que pueda garantizar una resistencia ilimitada a cualquier producto químico o combinación de productos.

Para la manipulación prolongada o repetida, usar guantes resistentes a los productos químicos.

Materiales adecuados para guantes de protección (EN 374/EN 16523); FKM (Caucho fluorado): espesor  $\geq 0.4$  mm; tiempo de permeación  $\geq 480$  min.; NBR (Caucho nitrilo): espesor  $\geq 0.4$  mm; tiempo de permeación  $\geq 480$  min.

La elección de los guantes adecuados no solo depende del material sino también de otras características de calidad que varían de un

fabricante a otro, y de los métodos y tiempos de uso de la mezcla.

**Protección respiratoria:**

Si los trabajadores están expuestos a concentraciones superiores a los límites de exposición, deben utilizar respiradores certificados y adecuados.

Dispositivo de filtrado combinado (EN 14387): máscara con filtro A-P2.

**Controles de la exposición ambiental:**

Ver punto 6.2

**Medidas higiénicas y técnicas**

Ver apartado 7.

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## **SECCIÓN 9. Propiedades físicas y químicas**

### **9.1. Información sobre propiedades físicas y químicas básicas**

Aspecto: Líquido

Color: incoloro

Olor: sabroso

Punto de fusión/congelamiento: N.D.

Punto de ebullición inicial e intervalo de ebullición: > 77 °C (171 °F)

Inflamabilidad: El producto está clasificado Flam. Liq. 2 H225

Límite superior/inferior de inflamabilidad o explosión: N.D.

Punto de inflamación: < 23°C

Temperatura de auto-inflamación: N.D.

Temperatura de descomposición: N.D.

pH: N.A. ( No es aplicable debido a la naturaleza del producto )

Viscosidad cinemática: N.A.

Densidad: 0,9 kg/l ( Método interno )

Densidad de los vapores: 3,04

Presión de vapor: N.D.

Hidrosolubilidad: N.A.

Solubilidad en aceite: N.A.

Coefficiente de reparto (n-octanol/agua): N.A.

#### **Características de las partículas:**

Tamaño de las partículas: N.A.

### **9.2. Otros datos**

Conductividad: N.D.

Propiedades explosivas: N.A.

Propiedades comburentes: N.A.

Tasa de evaporación: N.A.

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## **SECCIÓN 10. Estabilidad y reactividad**

### **10.1. Reactividad**

Estable en condiciones normales

### **10.2. Estabilidad química**

Estable en condiciones normales

### **10.3. Posibilidad de reacciones peligrosas**

Debido al efecto del calor o en caso de incendio, se pueden liberar óxidos de carbono y vapores que pueden ser perjudiciales para la salud.

Mantener alejado de agentes oxidantes y materiales fuertemente alcalinos o ácidos, para evitar reacciones exotérmicas.

Los vapores pueden formar mezclas explosivas con el aire.

### **10.4. Condiciones que deben evitarse**

Evitar acercarse a fuentes de calor.

### **10.5. Materiales incompatibles**

Evitar el contacto con materiales oxidantes. El producto podría inflamarse.

Ver punto 10.3

### **10.6. Productos de descomposición peligrosos**

En caso de almacenamiento y manipulación adecuados no se desarrollan productos de descomposición peligrosos.

Ver punto 5.2

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## **SECCIÓN 11. Información toxicológica**

### **11.1. Información sobre las clases de peligro definidas en el Reglamento (CE) n.o 1272/2008**

#### **Información toxicológica del producto:**

a) toxicidad aguda

No clasificado

	A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
b) corrosión o irritación cutáneas	No clasificado
	A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
c) lesiones o irritación ocular graves	El producto está clasificado: Eye Irrit. 2(H319)
d) sensibilización respiratoria o cutánea	No clasificado
	A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
e) mutagenicidad en células germinales	No clasificado
	A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
f) carcinogenicidad	No clasificado
	A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
g) toxicidad para la reproducción	No clasificado
	A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
h) toxicidad específica en determinados órganos (STOT) – exposición única	El producto está clasificado: STOT SE 3(H336)
i) toxicidad específica en determinados órganos (STOT) – exposición repetida	No clasificado
	A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
j) peligro de aspiración	No clasificado
	A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

**La información toxicológica de las sustancias principales halladas en el producto:**

Acetato de etilo	a) toxicidad aguda	LD50 Oral Rata 4934 mg/kg LD50 Piel Conejo > 20000 mg/kg LC50 Vapor de inhalación Rata > 22.5 mg/l 6h
acetato de n-butilo	a) toxicidad aguda	LD50 Oral Rata 10760 mg/kg LD50 Piel Conejo 14112 mg/kg LC50 Vapor de inhalación Rata > 21.1 mg/l 4h

**11.2. Información relativa a otros peligros**

**Propiedades de alteración endocrina:**

Ningún perturbador endocrino presente en concentración  $\geq 0.1\%$

**SECCIÓN 12. Información ecológica**

Utilícese con técnicas de trabajo adecuadas, evitando la dispersión del producto en el medio ambiente.

**12.1. Toxicidad**

Información Ecotoxicológica:

**Lista de propiedades eco-toxicológicas del producto**

No clasificado para riesgos medio ambientales

No hay datos disponibles para el producto

**Lista de componentes con propiedades ecotoxicológicas**

Componente	Núm. Ident.	Inform Ecotox
Acetato de etilo	CAS: 141-78-6 - EINECS: 205- 500-4 - INDEX: 607-022-00-5	a) Toxicidad acuática aguda : LC50 Peces 230 mg/l 96h
		a) Toxicidad acuática aguda : EC50 Daphnia 165 mg/l 48h
acetato de n-butilo	CAS: 123-86-4 - EINECS: 204- 658-1 - INDEX: 607-025-00-1	a) Toxicidad acuática aguda : LC50 Peces 18 mg/l 96h
		a) Toxicidad acuática aguda : EC50 Daphnia 44 mg/l 48h

- a) Toxicidad acuática aguda : EC50 Algas 675 mg/l 72h  
b) Toxicidad acuática crónica : NOEC Daphnia 23 mg/l - 21d

## 12.2. Persistencia y degradabilidad

Componente	Persistencia/degradabilidad:
Acetato de etilo	Rápidamente degradable
acetato de n-butilo	Rápidamente degradable

## 12.3. Potencial de bioacumulación

N.A.

## 12.4. Movilidad en el suelo

N.A.

## 12.5. Resultados de la valoración PBT y mPmB

Sobre la base de los datos disponibles, el producto no contiene sustancias PBT/mPmB en porcentaje  $\geq$  0.1%.

## 12.6. Propiedades de alteración endocrina

Ningún perturbador endocrino presente en concentración  $\geq$  0.1%

## 12.7. Otros efectos adversos

N.A.

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## SECCIÓN 13. Consideraciones relativas a la eliminación

### 13.1. Métodos para el tratamiento de residuos

Recuperar si es posible. Enviar a centros de eliminación autorizados o a incineración en condiciones controladas. Operar conforme con las disposiciones locales y nacionales vigentes.

No permitir la entrada en alcantarillados o cursos de agua.

Deseche los recipientes contaminados por el producto de acuerdo con las disposiciones legales locales o nacionales.

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## SECCIÓN 14. Información relativa al transporte



### 14.1. Número ONU o número ID

1993

### 14.2. Designación oficial de transporte de las Naciones Unidas

ADR-Designación del transporte: LÍQUIDO INFLAMABLE, N.E.P. (Acetato de etilo - acetato de n-butilo)

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

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

### 14.3. Clase(s) de peligro para el transporte

ADR-Por carretera: 3

IATA-Clase: 3

IMDG-Clase: 3

### 14.4. Grupo de embalaje

ADR-Grupo de embalaje: II

IATA-Grupo de embalaje: II

IMDG-Grupo de embalaje: II

### 14.5. Peligros para el medio ambiente

Agente contaminante del mar: No

Contaminante ambiental: No

IMDG-EMS: F-E, S-E

### 14.6. Precauciones particulares para los usuarios

Carretera y Ferrocarril (ADR-RID)

ADR-Etiquetado: 3

ADR - Número de identificación del peligro: 33



ADR-Disposiciones especiales: 274 601 640D

ADR-Categoría de transporte (Código de restricción en túneles):

Aire (IATA)

IATA-Pasajeros del avión: 353

IATA-Carga del avión: 364

IATA-Etiquetado: 3

IATA-Peligro secundario: -

IATA-Erg: 3H

IATA-Disposiciones especiales: A3

Mar (IMDG)

IMDG-Código de estiba: Category B

IMDG-Nota de estiba: -

IMDG-Peligro secundario: -

IMDG-Disposiciones especiales: 274

#### 14.7. Transporte marítimo a granel con arreglo a los instrumentos de la OMI

N.A.

### SECCIÓN 15. Información reglamentaria

#### 15.1. Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla

Dir. 98/24/CE (Riesgos relacionados con los agentes químicos durante el trabajo)

Dir. 2000/39/CE (Valores límite de exposición profesional)

Directiva 2010/75/EU

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

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

Reglamento (CE) n. 790/2009 (ATP 1 CLP) y (UE) n. 758/2013

Reglamento (UE) n. 2020/878

Reglamento (UE) n. 286/2011 (ATP 2 CLP)

Reglamento (UE) n. 618/2012 (ATP 3 CLP)

Reglamento (UE) n. 487/2013 (ATP 4 CLP)

Reglamento (UE) n. 944/2013 (ATP 5 CLP)

Reglamento (UE) n. 605/2014 (ATP 6 CLP)

Reglamento (UE) n. 2015/1221 (ATP 7 CLP)

Reglamento (UE) n. 2016/918 (ATP 8 CLP)

Reglamento (UE) n. 2016/1179 (ATP 9 CLP)

Reglamento (UE) n. 2017/776 (ATP 10 CLP)

Reglamento (UE) n. 2018/669 (ATP 11 CLP)

Reglamento (UE) n. 2018/1480 (ATP 13 CLP)

Reglamento (UE) n. 2019/521 (ATP 12 CLP)

Reglamento (UE) n. 2020/217 (ATP 14 CLP)

Reglamento (UE) n. 2020/1182 (ATP 15 CLP)

Reglamento (UE) n. 2021/643 (ATP 16 CLP)

Reglamento (UE) n. 2021/849 (ATP 17 CLP)

Reglamento (UE) n. 2022/692 (ATP 18 CLP)

#### Restricciones relacionadas con el producto o las sustancias contenidas, de acuerdo con el anexo XVII del Reglamento (CE) 1907/2006 (REACH) y las modificaciones posteriores:

Restricciones relacionadas con el producto: 3, 40

Restricciones relacionadas con las sustancias contenidas: 75

#### Disposiciones sobre la directiva EU 2012/18 (Seveso III):

**Categoría Seveso III de acuerdo con el anexo 1, parte 1 (toneladas)**

el producto pertenece a la categoría: P5c

**Requisitos de nivel inferior (toneladas)**

5000

**Requisitos de nivel superior (toneladas)**

50000

#### Reglamento (UE) No 649/2012 (Reglamento PIC)

No hay sustancias listadas

#### Clase de peligro para las aguas (Alemania).

1: Low hazard to waters

#### Sustancias SVHC:

Sobre la base de los datos disponibles, el producto no contiene sustancias SVHC en porcentaje  $\geq 0.1\%$ .

## 15.2. Evaluación de la seguridad química

No se ha realizado ninguna evaluación de la seguridad química para la mezcla

## SECCIÓN 16. Otra información

Código	Descripción
EUH066	La exposición repetida puede provocar sequedad o formación de grietas en la piel.
H225	Líquido y vapores muy inflamables.
H226	Líquidos y vapores inflamables.
H319	Provoca irritación ocular grave.
H336	Puede provocar somnolencia o vértigo.

Código	Clase y categoría de peligro	Descripción
2.6/2	Flam. Liq. 2	Líquidos inflamables, Categoría 2
2.6/3	Flam. Liq. 3	Líquidos inflamables, Categoría 3
3.3/2	Eye Irrit. 2	Irritación ocular, Categoría 2
3.8/3	STOT SE 3	Toxicidad específica en determinados órganos (exposiciones única), Categoría 3

### Clasificación y procedimiento utilizado para determinar la clasificación de las mezclas con arreglo al Reglamento (CE) nº 1272/2008 [CLP]:

#### Clasificación con arreglo al Reglamento Procedimiento de clasificación (CE) nº 1272/2008

2.6/2	Conforme a datos obtenidos de los ensayos
3.3/2	Método de cálculo
3.8/3	Método de cálculo

Este documento ha sido preparado por una persona competente que ha recibido un entrenamiento adecuado

Principales fuentes bibliográficas:

- ECDIN: Environmental Chemicals Data and Information Network, Centro Común de Investigación, Comisión de las Comunidades Europeas
- SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, 8ª ed., Van Nostrand Reinold
- Fichas de datos de seguridad de los proveedores de materias primas.
- CCNL - Allegato 1

La información aquí detallada se basa en nuestros conocimientos hasta la fecha señalada arriba. Se refiere exclusivamente al producto indicado y no constituye garantía de cualidades particulares.

El usuario debe asegurarse de la idoneidad y exactitud de dicha información en relación al uso específico que debe hacer del producto.

Esta ficha anula y sustituye toda edición precedente.

Explicación de las abreviaturas y acrónimos usados en la ficha de datos de seguridad:

- ACGIH: Conferencia Americana de Higienistas Industriales Gubernamentales
- ADR: Acuerdo europeo relativo al transporte internacional de mercancías peligrosas por carretera.
- ATE: Estimación de la toxicidad aguda
- ATEmix: Estimación de Toxicidad Aguda (Mezclas)
- BEI: Índice Biológico de Exposición
- CAS: Chemical Abstracts Service (de la American Chemical Society).
- CAV: Instituto de toxicología
- CE: Comunidad Europea
- CLP: Clasificación, etiquetado, embalaje.
- CMR: Carcinógeno, mutagénico y tóxico para la reproducción
- COV: Compuesto orgánico volátil
- CSA: Valoración de la seguridad química
- CSR: Informe sobre la seguridad química
- DNEL: Nivel sin efecto derivado.
- EC50: Concentración efectiva media
- ECHA: Agencia Europea de Sustancias y Preparados Químicos
- EINECS: Catálogo Europeo de Sustancias Químicas Comercializadas.
- ES: Escenario de exposición
- GefStoffVO: Ordenanza sobre sustancias peligrosas, Alemania.
- GHS: Sistema Globalmente Armonizado de clasificación y etiquetado de productos químicos.
- IARC: Centro Internacional de Investigaciones sobre el Cáncer
- IATA: Asociación de Transporte Aéreo Internacional.
- IC50: Concentración inhibitoria media
- IMDG: Código marítimo internacional de mercancías peligrosas.

LC50: Concentración letal para el 50% de la población expuesta.  
LD50: Dosis letal para el 50% de la población expuesta.  
LDLo: Dosis letal baja  
N.A.: No aplicable  
N/A: No aplicable  
N/D: No definido/No disponible  
N.D.: No disponible  
NIOSH: Instituto Nacional para la Salud y la Seguridad Ocupacional  
NOAEL: Nivel sin Efecto Adverso Observado  
OSHA: Administración de Seguridad y Salud Ocupacional.  
PBT: Persistente, bioacumulable y tóxico  
PGK: Instrucciones de embalaje  
PNEC: Concentración prevista sin efecto.  
PSG: Pasajeros  
RID: Normas relativas al transporte internacional de mercancías peligrosas por ferrocarril.  
STEL: Nivel de exposición de corta duración.  
STOT: Toxicidad específica en determinados órganos.  
TLV: Valor límite del umbral.  
TLV-TWA: Valor límite del umbral para el tiempo medio ponderado de 8 horas por día (Estándar ACGIH).  
vPvB: Muy persistente y muy bioacumulable.  
WGK: Clase de peligro para las aguas (Alemania).

# 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:  $\leq 1$  t/day

Annual amount per site:  $\leq 300$  t/year

##### Organizational and technical measures and conditions

A wastewater treatment plant is expected.

Assumed domestic sewage treatment plant flow:  $\geq 2 \times 10^3$  m<sup>3</sup>/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 m<sup>3</sup>/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 <sup>3</sup> (ECETOC TRA worker v3)	< 0.01
inhalation	systemic	Short term	0.147 mg/m <sup>3</sup> (ECETOC TRA worker v3)	< 0.01
inhalation	local	Long-term	0.037 mg/m <sup>3</sup> (ECETOC TRA worker v3)	< 0.01
inhalation	local	Short term	0.147 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	361.7 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	361.7 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	361.7 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	361.7 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	systemic	Short term	734.2 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.5
inhalation	local	Long-term	183.5 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	local	Short term	734.2 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.05
inhalation	systemic	Short term	146.8 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.1
inhalation	local	Long-term	36.71 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.05
inhalation	local	Short term	146.8 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	367.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	367.1 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	367.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	367.1 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	367.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	367.1 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	367.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	367.1 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0,038
inhalation	systemic	Short term	110.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0,075
inhalation	local	Long-term	27.53 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0,038
inhalation	local	Short term	110.1 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	367.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	367.1 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	367.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	367.1 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	systemic	Short term	734.2 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.5
inhalation	local	Long-term	183.5 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	local	Short term	734.2 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.1
inhalation	systemic	Short term	293.6 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.2
inhalation	local	Long-term	73.42 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.1
inhalation	local	Short term	293.6 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	367.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	367.1 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	< 0.01
inhalation	systemic	Short term	1.468 mg/m <sup>3</sup> (ECETOC TRA worker v3)	< 0.01
inhalation	local	Long-term	0.367 mg/m <sup>3</sup> (ECETOC TRA worker v3)	< 0.01
inhalation	local	Short term	1.468 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	systemic	Short term	734.2 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.5
inhalation	local	Long-term	183.5 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	local	Short term	734.2 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	local	Short term	734.2 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.5
inhalation	local	Long-term	183.5 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	systemic	Short term	734.2 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	systemic	Short term	1.03 g/m <sup>3</sup> (ECETOC TRA worker v3)	0.7
inhalation	local	Long-term	256.9 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	local	Short term	1.03 g/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.175
inhalation	systemic	Short term	513.9 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	local	Long-term	128.4 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.175
inhalation	local	Short term	513.9 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	systemic	Short term	1.03 g/m <sup>3</sup> (ECETOC TRA worker v3)	0.7
inhalation	local	Long-term	256.9 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	local	Short term	1.03 g/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	systemic	Short term	1.03 g/m <sup>3</sup> (ECETOC TRA worker v3)	0.7
inhalation	local	Long-term	256.9 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	local	Short term	1.03 g/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.175
inhalation	systemic	Short term	513.9 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	local	Long-term	128.4 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.175
inhalation	local	Short term	513.9 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	systemic	Short term	1.03 g/m <sup>3</sup> (ECETOC TRA worker v3)	0.7
inhalation	local	Long-term	256.9 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	local	Short term	1.03 g/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	systemic	Short term	367.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	local	Long-term	91.77 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.125
inhalation	local	Short term	367.1 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	systemic	Short term	1.03 g/m <sup>3</sup> (ECETOC TRA worker v3)	0.7
inhalation	local	Long-term	256.9 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	local	Short term	1.03 g/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.175
inhalation	systemic	Short term	513.9 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	local	Long-term	128.4 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.175
inhalation	local	Short term	513.9 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.42
inhalation	systemic	Short term	mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.84
inhalation	local	Long-term	308.3 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.42
inhalation	local	Short term	mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.21
inhalation	systemic	Short term	616.7 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.42
inhalation	local	Long-term	154.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.21
inhalation	local	Short term	616.7 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.225
inhalation	systemic	Short term	660.7 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.45
inhalation	local	Long-term	165.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.225
inhalation	local	Short term	660.7 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.053
inhalation	systemic	Short term	154.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.105
inhalation	local	Long-term	38.54 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.053
inhalation	local	Short term	154.1 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	systemic	Short term	734.2 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.5
inhalation	local	Long-term	183.5 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.25
inhalation	local	Short term	734.2 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.45
inhalation	systemic	Short term	1.32 g/m <sup>3</sup> (ECETOC TRA worker v3)	0.9
inhalation	local	Long-term	330.3 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.45
inhalation	local	Short term	1.32 g/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	systemic	Short term	mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.7
inhalation	local	Long-term	256.9 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	local	Short term	mg/m <sup>3</sup> (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	0.000598 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 <sup>3</sup> (ECETOC TRA worker v3)	0.225
inhalation	systemic	Short term	660.7 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.45
inhalation	local	Long-term	165.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.225
inhalation	local	Short term	660.7 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.15
inhalation	local	Long-term	110.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.15
inhalation	local	Short term	440.5 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.3
inhalation	systemic	Short term	440.5 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.3
inhalation	systemic	Short term	881.0 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.6
inhalation	local	Long-term	220.2 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.3
inhalation	local	Short term	881.0 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.225
inhalation	systemic	Short term	660.7 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.45
inhalation	local	Long-term	165.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.225
inhalation	local	Short term	660.7 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.105
inhalation	systemic	Short term	308.3 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.21
inhalation	local	Long-term	77.09 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.105
inhalation	local	Short term	308.3 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.225
inhalation	systemic	Short term	660.7 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.45
inhalation	local	Long-term	165.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.225
inhalation	local	Short term	660.7 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.45
inhalation	systemic	Short term	mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.9
inhalation	local	Long-term	330.3 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.45
inhalation	local	Short term	mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.3
inhalation	systemic	Short term	881.0 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.6
inhalation	local	Long-term	220.2 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.3
inhalation	local	Short term	881.0 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	systemic	Short term	1.03 g/m <sup>3</sup> (ECETOC TRA worker v3)	0.7
inhalation	local	Long-term	256.9 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	local	Short term	1.03 g/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	systemic	Short term	1.03 g/m <sup>3</sup> (ECETOC TRA worker v3)	0.7
inhalation	local	Long-term	256.9 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.35
inhalation	local	Short term	1.03 g/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.3
inhalation	systemic	Short term	881.0 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.6
inhalation	local	Long-term	220.2 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.3
inhalation	local	Short term	881.0 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.053
inhalation	systemic	Short term	154.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.105
inhalation	local	Long-term	38.54 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.053
inhalation	local	Short term	154.1 mg/m <sup>3</sup> (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 <sup>3</sup> (ECETOC TRA worker v3)	0.15
inhalation	systemic	Short term	440.5 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.3
inhalation	local	Long-term	110.1 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0.15
inhalation	local	Short term	440.5 mg/m <sup>3</sup> (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 m<sup>3</sup>/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 m<sup>3</sup>/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:  $\geq 0$  -  $\leq 100\%$

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**

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/m<sup>3</sup>  
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/m<sup>3</sup>  
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:  $\geq 0$  -  $\leq 100\%$

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***

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/m<sup>3</sup>

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 m<sup>3</sup>/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 m<sup>3</sup>/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/m<sup>3</sup>  
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/m<sup>3</sup>

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/m<sup>3</sup>

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 m<sup>3</sup>/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 m<sup>3</sup>/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 m<sup>3</sup>/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 m<sup>3</sup>/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/m<sup>3</sup>

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/m<sup>3</sup>

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:  $\geq 0$  -  $\leq 45\%$

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.

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/m<sup>3</sup>

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:  $\geq 0$  -  $\leq 100\%$

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**

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/m<sup>3</sup>

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:  $\geq 0$  -  $\leq 100\%$

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: 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/m<sup>3</sup>

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:  $\geq 0$  -  $\leq 100\%$

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/m<sup>3</sup>

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/m<sup>3</sup>

Risk Characterization Ratio (RCR): 0.483993

### ***Guidance for downstream users***

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