

Sicherheitsdatenblatt**DILUENTE ADW**

Sicherheitsdatenblatt vom 12/06/2023 Version 1

Achtung: Die Nummerierung startet mit 1.

ABSCHNITT 1: Bezeichnung des Stoffs beziehungsweise des Gemischs und des Unternehmens**1.1. Produktidentifikator**

Kennzeichnung der Mischung:

Handelsname: DILUENTE ADW

Handelscode: 583K

UFI: D2M1-00XS-S00R-AKV1

1.2. Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird

Empfohlene Verwendung: Verdünnung

1.3. Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt

Lieferant: FASSA Srl

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

Tel. +39 0422 7222

Fax +39 0422 887509

Verantwortlicher: laboratorio.spresiano@fassabortolo.it

1.4. Notrufnummer

Principali Centri Antiveleni italiani:

MILANO Osp. Niguarda Ca' Granda: 02 66101029

ROMA Osp. Pediatrico Bambino Gesù: 06 68593726

ROMA Policlinico Umberto I: 06 49978000

ROMA Policlinico A. Gemelli: 06 3054343

FOGGIA Az. Osp. Univ. Foggia: 800183459

NAPOLI Az. Osp. A. Cardarelli: 081-5453333

FIRENZE Az. Osp. Careggi U.O. Tossicologia Medica: 055 7947819

PAVIA Centro Nazionale di Informazione Tossicologica: 0382 24444

BERGAMO Azienda Ospedaliera Papa Giovanni XXIII: 800883300

VERONA Azienda Ospedaliera Integrata Verona: 800011858

ABSCHNITT 2: Mögliche Gefahren**2.1. Einstufung des Stoffs oder Gemischs****Verordnung (EG) Nr. 1272/2008 (CLP)**

Flam. Liq. 2	Flüssigkeit und Dampf leicht entzündbar.
Eye Irrit. 2	Verursacht schwere Augenreizung.
STOT SE 3	Kann Schläfrigkeit und Benommenheit verursachen.

Für die menschlichen Gesundheit und die Umwelt gefährliche physisch-chemische Auswirkungen:

Keine weiteren Risiken

2.2. Kennzeichnungselemente**Verordnung (EG) Nr. 1272/2008 (CLP)****Gefahrenpiktogramme und Signalwort**

Gefahr

Gefahrenhinweise

H225	Flüssigkeit und Dampf leicht entzündbar.
H319	Verursacht schwere Augenreizung.
H336	Kann Schläfrigkeit und Benommenheit verursachen.

Sicherheitshinweise

P210 Von Hitze, heißen Oberflächen, Funken, offenen Flammen sowie anderen Zünd-quellenarten fernhalten.

	Nicht rauchen.
P233	Behälter dicht verschlossen halten.
P261	Einatmen von Rauch/Gas/Nebel/Dampf/Aerosol vermeiden.
P280	Schutzhandschuhe und Augenschutz/Gesichtsschutz tragen.
P312	Bei Unwohlsein GIFTINFORMATIONSZENTRUM/Arzt anrufen.
P370+P378	Bei Brand: Pulverfeuerlöscher zum Löschen verwenden.
P403+P235	An einem gut belüfteten Ort aufbewahren. Kühl halten.

Spezielle Vorschriften:

EUH066 Wiederholter Kontakt kann zu spröder oder rissiger Haut führen.

Enthält:

Ethylacetat
n-Butylacetat

Besondere Regelungen gemäß Anhang XVII der REACH-Verordnung nachfolgenden Änderungen:

Keine

2.3. Sonstige Gefahren

Keine PBT-, vPvB-Stoffe oder endokrine Disruptoren in Konzentrationen $\geq 0.1\%$:

Keine weiteren Risiken

ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

3.1. Stoffe

N.A.

3.2. Gemische

Kennzeichnung der Mischung: DILUENTE ADW

Gefährliche Bestandteile gemäß der CLP-Verordnung und dazugehörige Einstufung:

Menge	Name	Kennnr.	Einstufung	Registriernummer
$\geq 80\%$	Ethylacetat	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
$\geq 5 - < 10\%$	n-Butylacetat	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

ABSCHNITT 4: Erste-Hilfe-Maßnahmen

4.1. Beschreibung der Erste-Hilfe-Maßnahmen

Nach Hautkontakt:

- Die kontaminierten Kleidungsstücke sofort ablegen und sie auf sichere Weise entsorgen.
- Körperbereiche, die mit dem Produkt in Kontakt getreten sind, bzw. bei denen dieser Verdacht besteht, müssen sofort mit viel fließendem Wasser und möglichst mit Seife gewaschen werden.
- Den Körper vollständig waschen (Dusche oder Bad).

Nach Augenkontakt:

- Im Falle von Augenkontakt die Augen über einen ausreichenden Zeitraum mit Wasser spülen und die Augenlider offen halten; sofort einen Augenarzt konsultieren.
- Das unverletzte Auge schützen.

Nach Verschlucken:

- Nicht zum Erbrechen bringen, Arzt aufsuchen zeigt dieses Sicherheitsdatenblatt und Kennzeichnung der Gefahr.

Nach Einatmen:

- Den Verletzten ins Freie bringen, ihn ausruhen lassen und warm halten.

4.2. Wichtigste akute und verzögert auftretende Symptome und Wirkungen

Die Symptome und Effekte treten wie durch die Gefahren erwartet ein, siehe Abschnitt 2.

4.3. Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung

Im Falle eines Unfalls bzw. bei Unwohlsein sofort einen Arzt konsultieren (wenn möglich, die Bedienungsanleitung bzw. das Sicherheitsdatenblatt vorzeigen).

ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

5.1. Löschmittel

Geeignete Löschmittel:

Bei Brand: Pulverfeuerlöscher zum Löschen verwenden.
CO₂, Löschpulver, Schaum, zerstäubte Wasser.

Löschmittel, die aus Sicherheitsgründen nicht verwendet werden dürfen:

Wasserstrahl.

5.2. Besondere vom Stoff oder Gemisch ausgehende Gefahren

Durch die Verbrennung entsteht ein dichter Rauch.
Die Explosions- bzw. Verbrennungsgase nicht einatmen (Kohlendioxid, Kohlenmonoxid, Stickoxide).
Dämpfe können mit Luft ein explosionsfähiges Gemisch bilden.

5.3. Hinweise für die Brandbekämpfung

Geeignete Atemgeräte verwenden.
Das kontaminierte Löschwasser getrennt auffangen. Nicht in der Abwasserleitung entsorgen.
Wenn im Rahmen der Sicherheit möglich, die unbeschädigten Behälter aus der unmittelbaren Gefahrenzone entfernen.

ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

6.1. Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren

Die persönliche Schutzausrüstung tragen.
Alle Entzündungsquellen entfernen.
Die Personen an einen sicheren Ort bringen.
Die in Punkt 7 und 8 aufgeführten Schutzmaßnahmen beachten.

6.2. Umweltschutzmaßnahmen

Das Eindringen in den Boden/Unterboden verhindern. Das Abfließen in das Grundwasser oder in die Kanalisation verhindern.
Bei Austritt von Gas oder bei Eintritt in Wasserläufe, den Boden oder die Kanalisation die zuständigen Behörden informieren.

6.3. Methoden und Material für Rückhaltung und Reinigung

Geeigneten Materialien zur Aufnahme: saugfähige Inertmaterialien (z. B. Sand, Vermiculit).
Das kontaminierte Waschwasser auffangen und entsorgen.

6.4. Verweis auf andere Abschnitte

Siehe auch die Abschnitte 8 und 13

ABSCHNITT 7: Handhabung und Lagerung

7.1. Schutzmaßnahmen zur sicheren Handhabung

Haut- und Augenkontakt sowie das Einatmen von Dämpfen vermeiden.
Keine leeren Behälter verwenden, bevor diese nicht gereinigt wurden.
Vor dem Umfüllen sicherstellen, dass sich in den Behältern keine Reste inkompatibler Stoffe befinden.

Hinweise zur allgemeinen Hygiene am Arbeitsplatz:

Kontaminierte Kleidungsstücke müssen vor dem Eintritt in Speiseräume gewechselt werden.
Während der Arbeit nicht essen oder trinken.
Für die empfohlenen Schutzausrüstungen wird auf Abschnitt 8 verwiesen.

7.2. Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten

Behälter gut geschlossen, in frischen und belüfteten Raum und weit von Wärmequellen halten.
Vor offenen Flammen, Zündfunken und Wärmequellen fern halten. Keiner direkten Sonneneinstrahlung aussetzen.
Lebensmittel, Getränke und Tiernahrung fern halten.

Unverträgliche Werkstoffe:

Siehe Kap. 10.5

Angaben zu den Lagerräumen:

Kühl und ausreichend belüftet.

7.3. Spezifische Endanwendungen

Empfehlungen

Siehe Kap. 1.2

Spezifische Lösungen für den Industriesektor

Kein besonderer Verwendungszweck

ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

8.1. Zu überwachende Parameter

Bestandteile der Rezeptur mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten.

	MAK- Typ	Land	Langzeit mg/m ³	Langzeit ppm	Kurzzeit mg/m ³	Kurzzeit ppm	Anmerkung
Ethylacetat CAS: 141-78-6	ACGIH			400			URT and eye irr

EU		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
ACGIH			50		150

n-Butylacetat
CAS: 123-86-4

Eye and URT irr

EU		241	50	723	150
MAK	AUSTRIA	480	100	480.000	100.000
VLEP	BELGIUM	238.000	50.000	712.000	150.000
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	

Butylacetates, all isomers

Liste der Komponenten in der Formel mit PNEC-Wert

	PNEC- GRENZ WERT	Expositionswe g	Expositionshäu figkeit	Bemerkung
Ethylacetat CAS: 141-78-6	0.024 mg/l	Meerwasser		
	0.24 mg/l	Süßwasser		
	0.115 mg/kg	Meerwasser- Sedimente		
	1.15 mg/kg	Süßwasser- Sedimente		
	650 mg/l	Mikroorganismen in Kläranlagen (STP)		

	0.148 mg/kg	Boden (Landwirtschaft)
n-Butylacetat CAS: 123-86-4	0.018 mg/l	Meerwasser
	0.18 mg/l	Süßwasser
	0.098 mg/kg	Meerwasser- Sedimente
	0.981 mg/kg	Süßwasser- Sedimente
	35.6 mg/l	Mikroorganismen in Kläranlagen (STP)
	0.09 mg/kg	Boden (Landwirtschaft)

Abgeleitetes Null-Effekt-Niveau (DNEL)

	Arbeitnehmer Industrie	Arbeitnehmer Gewerbe	Verbraucher	Expositionsweg	Expositionshäufigkeit	Bemerkung
Ethylacetat CAS: 141-78-6	734 mg/m ³	367 mg/m ³	367 mg/m ³	Mensch - Inhalation	Langfristig, systemische Auswirkungen	
	734 mg/m ³	367 mg/m ³	367 mg/m ³	Mensch - Inhalation	Langfristig, lokale Auswirkungen	
	1468 mg/m ³	734 mg/m ³	734 mg/m ³	Mensch - Inhalation	Kurzfristig, systemische Auswirkungen	
	1468 mg/m ³	734 mg/m ³	734 mg/m ³	Mensch - Inhalation	Kurzfristig, lokale Auswirkungen	
	63 mg/kg	37 mg/kg	37 mg/kg	Mensch - dermal	Langfristig, systemische Auswirkungen	
			4.5 mg/kg	Mensch - oral	Langfristig, systemische Auswirkungen	
n-Butylacetat CAS: 123-86-4	300 mg/m ³	35.7 mg/m ³	35.7 mg/m ³	Mensch - Inhalation	Langfristig, systemische Auswirkungen	
	600 mg/m ³	300 mg/m ³	300 mg/m ³	Mensch - Inhalation	Kurzfristig, systemische Auswirkungen	
	300 mg/m ³	35.7 mg/m ³	35.7 mg/m ³	Mensch - Inhalation	Langfristig, lokale Auswirkungen	
	600 mg/m ³	300 mg/m ³	300 mg/m ³	Mensch - Inhalation	Kurzfristig, lokale Auswirkungen	
	11 mg/kg	6 mg/kg	6 mg/kg	Mensch - dermal	Langfristig, systemische Auswirkungen	
	11 mg/kg	6 mg/kg	6 mg/kg	Mensch - dermal	Kurzfristig, systemische Auswirkungen	
			2 mg/kg	Mensch - oral	Kurzfristig, systemische Auswirkungen	
			2 mg/kg	Mensch - oral	Langfristig, systemische Auswirkungen	

8.2. Bearengung und Überwachung der Exposition

3.1. Begrenzung und Überwachung der Exposition:

Für gute Lüftung sorgen. Wo vernünftigerweise praktikabel sollte dies durch die Verwendung von lokalen Abluftventilatoren und guter allgemeiner Absaugung erreicht werden.

Augenschutz:

Brille mit seitlichem Schutz (EN 166).

Hautschutz:

Antistatische Kleidung aus Naturfaser oder hitzebeständiger Synthetikfaser tragen.

Handschutz:

Es gibt kein Handschuhmaterial oder Kombination von Materialien, die unbegrenzten Widerstand gegen einzelne oder eine Kombination von Chemikalien geben.

Für längeren oder wiederholten Umgang sind chemikalienbeständige Handschuhe zu verwenden.

Geeignete Materialien für Schutzhandschuhe (EN 374/EN 16523); FKM (Fluorkautschuk): Dicke ≥ 0.4 mm; Permeationszeit ≥ 480 min.; NBR (Nitrilkautschuk): Dicke ≥ 0.4 mm; Permeationszeit ≥ 480 min.

Bei der Wahl geeigneter Handschuhe müssen nicht nur das Material, sondern auch andere Qualitätsmerkmale, die von einem Hersteller zum anderen variieren können, sowie die Art und Dauer der Verwendung der Mischung berücksichtigt werden.

Atemschutz:

Wenn Arbeiter Konzentrationen oberhalb des Arbeitsplatzgrenzwertes ausgesetzt sind, so muss ein für diesen Zweck geeignetes, zugelassenes Atemschutzgerät getragen werden.

Filtergerät, kombiniert (EN 14387): Maske mit Filter A-P2.

Kontrollen der Umweltexposition:

Siehe Kap. 6.2

Hygienische und technische Maßnahmen

Siehe der Abschnitt 7.

ABSCHNITT 9: Physikalische und chemische Eigenschaften

9.1. Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften

Aussehen: flüssig

Farbe: farblos

Geruch: fruchtig

Schmelzpunkt/Gefrierpunkt: N.D.

Unterer Siedepunkt und Siedeintervall: > 77 °C (171 °F)

Entzündbarkeit: Das Produkt ist eingestuft Flam. Liq. 2 H225

Oberer/unterer Flamm- bzw. Explosionspunkt: N.D.

Flammpunkt: < 23 °C

Selbstentzündungstemperatur: N.D.

Zersetzungstemperatur: N.D.

pH-Wert: N.A. (Nicht anwendbar durch die Art des Produkts)

Kinematische Viskosität: N.A.

Dichte: 0,9 kg/l (Innere Methode)

Dampfdichte: 3,04

Dampfdruck: N.D.

Wasserlöslichkeit: N.A.

Löslichkeit in Öl: N.A.

Partitionskoeffizient (n-Oktanol/Wasser): N.A.

Partikeleigenschaften:

Teilchengröße: N.A.

9.2. Sonstige Angaben

Leitfähigkeit: N.D.

Explosionsgrenzen: N.A.

Oxidierende Eigenschaften: N.A.

Verdampfungsgeschwindigkeit: N.A.

ABSCHNITT 10: Stabilität und Reaktivität

10.1. Reaktivität

Stabil unter Normalbedingungen

10.2. Chemische Stabilität

Stabil unter Normalbedingungen

10.3. Möglichkeit gefährlicher Reaktionen

Bei Hitze und im Bandfall können Kohlendioxide und Dämpfe freigesetzt werden, die gesundheitsschädlich sein können.

Von Oxydationsmitteln sowie stark alkalischen und stark sauren Materialien fernhalten, um exotherme Reaktionen zu vermeiden.

Dämpfe können mit Luft ein explosionsfähiges Gemisch bilden.

10.4. Zu vermeidende Bedingungen

Von Wärmequellen fernhalten.

10.5. Unverträgliche Materialien

Kontakt mit brandfördernden Materialien vermeiden. Das Produkt könnte in Brand geraten.

Siehe Kap. 10.3

10.6. Gefährliche Zersetzungsprodukte

Keine gefährlichen Zersetzungsprodukte bei sachgemäßer Lagerung und Handhabung.

Siehe Kap. 5.2

ABSCHNITT 11: Toxikologische Angaben

11.1. Angaben zu den Gefahrenklassen im Sinne der Verordnung (EG) Nr. 1272/2008

Toxikologische Informationen zum Produkt:

a) akute Toxizität	Nicht klassifiziert
	Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
b) Ätz-/Reizwirkung auf die Haut	Nicht klassifiziert
	Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
c) schwere Augenschädigung/-reizung	Das Produkt ist eingestuft: Eye Irrit. 2(H319)
d) Sensibilisierung der Atemwege/Haut	Nicht klassifiziert
	Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
e) Keimzell-Mutagenität	Nicht klassifiziert
	Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
f) Karzinogenität	Nicht klassifiziert
	Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
g) Reproduktionstoxizität	Nicht klassifiziert
	Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
h) spezifische Zielorgan-Toxizität bei einmaliger Exposition	Das Produkt ist eingestuft: STOT SE 3(H336)
i) spezifische Zielorgan-Toxizität bei wiederholter Exposition	Nicht klassifiziert
	Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
j) Aspirationsgefahr	Nicht klassifiziert
	Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

Toxikologische Informationen zu den Hauptbestandteilen des Produkts:

Ethylacetat	a) akute Toxizität	LD50 Oral Ratte 4934 mg/kg LD50 Haut Kaninchen > 20000 mg/kg LC50 Einatembarer Dampf Ratte > 22.5 mg/l 6h
n-Butylacetat	a) akute Toxizität	LD50 Oral Ratte 10760 mg/kg LD50 Haut Kaninchen 14112 mg/kg LC50 Einatembarer Dampf Ratte > 21.1 mg/l 4h

11.2. Angaben über sonstige Gefahren

Endokrinschädliche Eigenschaften:

Keine endokrinen Disruptoren in Konzentrationen ≥ 0.1 %.

ABSCHNITT 12: Umweltbezogene Angaben

Im Einklang mit der GLP verwenden, nicht herumliegen lassen.

12.1. Toxizität

Angaben zur Ökotoxizität:

Liste der ökotoxikologischen Eigenschaften des Produkts

Nicht eingestuft für Umweltgefahren

Keine Daten vorhanden

Liste der Bestandteile mit ökotoxikologischen Wirkungen

Bestandteil	Kennnr.	Ökotox-Infos
Ethylacetat	CAS: 141-78-6 - a)	Akute aquatische Toxizität : LC50 Fische 230 mg/l 96h

EINECS: 205-
500-4 - INDEX:
607-022-00-5

n-Butylacetat

CAS: 123-86-4 -
EINECS: 204-
658-1 - INDEX:
607-025-00-1

a) Akute aquatische Toxizität : EC50 Daphnia 165 mg/l 48h

a) Akute aquatische Toxizität : LC50 Fische 18 mg/l 96h

a) Akute aquatische Toxizität : EC50 Daphnia 44 mg/l 48h

a) Akute aquatische Toxizität : EC50 Algen 675 mg/l 72h

b) Chronische aquatische Toxizität : NOEC Daphnia 23 mg/l - 21d

12.2. Persistenz und Abbaubarkeit

Bestandteil	Persistenz/Abbaubarkeit
Ethylacetat	Schnell abbaubar
n-Butylacetat	Schnell abbaubar

12.3. Bioakkumulationspotenzial

N.A.

12.4. Mobilität im Boden

N.A.

12.5. Ergebnisse der PBT- und vPvB-Beurteilung

Aufgrund der vorliegenden Angaben enthält das Produkt keine PBT/vPvB in Gehaltsprozenten \geq 0.1%.

12.6. Endokrinschädliche Eigenschaften

Keine endokrinen Disruptoren in Konzentrationen \geq 0.1 %.

12.7. Andere schädliche Wirkungen

N.A.

ABSCHNITT 13: Hinweise zur Entsorgung

13.1. Verfahren der Abfallbehandlung

Nach Möglichkeit wiederverwerten. Behördlich zugelassenen Deponien oder Verbrennungsanlagen zuführen. Entsprechend den geltenden örtlichen und nationalen Bestimmungen vorgehen.

Nicht in die Kanalisation oder fließende Gewässer gelangen lassen.

Durch das Produkt verunreinigte Behälter sind in Übereinstimmung mit lokalen und nationalen gesetzlichen Bestimmungen zu entsorgen.

ABSCHNITT 14: Angaben zum Transport



14.1. UN-Nummer oder ID-Nummer

1993

14.2. Ordnungsgemäße UN-Versandbezeichnung

ADR-Bezeichnung: ENTZÜNDBARER FLÜSSIGER STOFF, N.A.G. (Ethylacetat - n-Butylacetat)

IATA-Technische Bezeichnung: FLAMMABLE LIQUID, N.O.S. (Ethylacetat - n-Butylacetat)

IMDG-Technische Bezeichnung: FLAMMABLE LIQUID, N.O.S. (Ethylacetat - n-Butylacetat)

14.3. Transportgefahrenklassen

ADR-Straßentransport: 3

IATA-Klasse: 3

IMDG-Klasse: 3

14.4. Verpackungsgruppe

ADR-Verpackungsgruppe: II

IATA-Verpackungsgruppe: II

IMDG-Verpackungsgruppe: II

14.5. Umweltgefahren

Meeresschadstoff: Nein

Umweltbelastung: Nein

IMDG-EMS: F-E, S-E

14.6. Besondere Vorsichtsmaßnahmen für den Verwender

Straßen- und Eisenbahntransport (ADR-RID):

ADR-Label: 3

ADR - Gefahrunummer: 33

ADR-Sondervorschriften: 274 601 640D

ADR-Tunnelbeschränkungscode:

Lufttransport (IATA):

IATA-Passagierflugzeug: 353

IATA-Frachtflugzeug: 364

IATA-Label: 3

IATA-Nebengefahr: -

IATA-Erg: 3H

IATA-Sondervorschriften: A3

Seetransport (IMDG):

IMDG-Code (Stauung): Category B

IMDG-Note (Stauung): -

IMDG-Nebengefahr: -

IMDG-Sondervorschriften: 274

14.7. Massengutbeförderung auf dem Seeweg gemäß IMO-Instrumenten

N.A.

ABSCHNITT 15: Rechtsvorschriften

15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch

RL 98/24/EG (Schutz von Gesundheit und Sicherheit der Arbeitnehmer vor der Gefährdung durch chemische Arbeitsstoffe bei der Arbeit)

RL 2000/39/EG (Arbeitsplatz-Richtgrenzwerte)

Richtlinie 2010/75/EU

Verordnung (EG) Nr. 1907/2006 (REACH)

Verordnung (EG) Nr. 1272/2008 (CLP)

Verordnung (EG) Nr. 790/2009 (1. ATP CLP) und (EU) Nr. 758/2013

Verordnung (EU) Nr. 2020/878

Verordnung (EU) Nr. 286/2011 (2. ATP CLP)

Verordnung (EU) Nr. 618/2012 (3. ATP CLP)

Verordnung (EU) Nr. 487/2013 (4. ATP CLP)

Verordnung (EU) Nr. 944/2013 (5. ATP CLP)

Verordnung (EU) Nr. 605/2014 (6. ATP CLP)

Verordnung (EU) Nr. 2015/1221 (7. ATP CLP)

Verordnung (EU) Nr. 2016/918 (8. ATP CLP)

Verordnung (EU) Nr. 2016/1179 (9. ATP CLP)

Verordnung (EU) Nr. 2017/776 (10. ATP CLP)

Verordnung (EU) Nr. 2018/669 (11. ATP CLP)

Verordnung (EU) Nr. 2018/1480 (13. ATP CLP)

Verordnung (EU) Nr. 2019/521 (12. ATP CLP)

Verordnung (EU) Nr. 2020/217 (14. ATP CLP)

Verordnung (EU) Nr. 2020/1182 (15. ATP CLP)

Verordnung (EU) Nr. 2021/643 (16. ATP CLP)

Verordnung (EU) Nr. 2021/849 (17. ATP CLP)

Verordnung (EU) Nr. 2022/692 (18. ATP CLP)

Beschränkungen zum Produkt oder zu den Inhaltsstoffen gemäß Anhang XVII der Verordnung (EG) 1907/2006 (REACH) und nachfolgenden Änderungen:

Beschränkungen zum Produkt: 3, 40

Beschränkungen zu den Inhaltsstoffen gemäß: 75

Anordnungen zu der Richtlinie EU 2012/18 (Seveso III):

Seveso III Kategorie gemäß dem Anhang 1, Teil 1

Das Produkt gehört zur Kategorie: P5c

Unterer Schwellenwert (Tonnen)

5000

Oberer Schwellenwert (Tonnen)

50000

Verordnung (EU) Nr. 649/2012 (PIC-Verordnung)

Kein Stoff gelistet

Wassergefährdungsklasse

1: Low hazard to waters

SVHC-Stoffe:Aufgrund der vorliegenden Angaben enthält das Produkt keine SVHC in Gehaltsprozenten $\geq 0.1\%$.**15.2. Stoffsicherheitsbeurteilung**

Keine Stoffsicherheitsbeurteilung wurde durchgeführt für das Gemisch

ABSCHNITT 16: Sonstige Angaben

Code	Beschreibung
EUH066	Wiederholter Kontakt kann zu spröder oder rissiger Haut führen.
H225	Flüssigkeit und Dampf leicht entzündbar.
H226	Flüssigkeit und Dampf entzündbar.
H319	Verursacht schwere Augenreizung.
H336	Kann Schläfrigkeit und Benommenheit verursachen.

Code	Gefahrenklasse und Gefahrenkategorie	Beschreibung
2.6/2	Flam. Liq. 2	Entzündbare Flüssigkeiten, Kategorie 2
2.6/3	Flam. Liq. 3	Entzündbare Flüssigkeiten, Kategorie 3
3.3/2	Eye Irrit. 2	Reizung der Augen, Kategorie 2
3.8/3	STOT SE 3	Spezifische Zielorgan-Toxizität (einmalige Exposition), Kategorie 3

Einstufung und Verfahren, das zum Ableiten der Einstufung von Gemischen gemäß Verordnung (EG) 1272/2008 [CLP] verwendet wurde:**Einstufung gemäß Verordnung (EG) Nr. Einstufungsverfahren 1272/2008**

2.6/2	auf der Basis von Prüfdaten
3.3/2	Berechnungsmethode
3.8/3	Berechnungsmethode

Diese Unterlagen wurden von einem Fachmann mit entsprechender Ausbildung abgefasst.

Hauptsächliche Literatur:

ECDIN - Daten- und Informationsnetz über umweltrelevante Chemikalien - Vereinigtes Forschungszentrum, Kommission der Europäischen Gemeinschaft
SAX's GEFÄHRLICHE EIGENSCHAFTEN VON INDUSTRIELLEN SUBSTANZEN - Achte Auflage - Van Nostrand Reinold
Sicherheitsdatenblätter der Rohstoffzulieferer.
CCNL - Anlage 1

Die vorstehenden Angaben stützen sich auf den heutigen Stand unserer Kenntnisse. Sie gelten nur für das angegebene Produkt und stellen keine Zusage von Eigenschaften dar.

Es obliegt dem Anwender die Zuständigkeit und die Vollständigkeit dieser Angaben für seine spezifische Anwendung zu kontrollieren.

Dieses Datenblatt ersetzt alle früheren Ausgaben.

Legende der im Sicherheitsdatenblatt verwendeten Abkürzungen und Akronyme:

ACGIH: American Conference of Governmental Industrial Hygienists (ACGIH)
ADR: Europäisches Übereinkommen über die internationale Beförderung gefährlicher Güter auf der Straße
ATE: Schätzung Akuter Toxizität
ATEmix: Schätzwert der akuten Toxizität (Gemische)
BEI: Biologischer Expositionsindex
CAS: Chemical Abstracts Service (Abteilung der American Chemical Society)
CAV: Giftzentrale
CE: Europäische Gemeinschaft
CLP: Einstufung, Verpackung und Kennzeichnung
CMR: karzinogen, mutagen und reproduktionstoxisch
COV: Flüchtige organische Verbindung
CSA: Stoffsicherheitsbeurteilung
CSR: Stoffsicherheitsbericht
DNEL: Abgeleitetes Null-Effekt-Niveau (DNEL)

EC50: Mittlere effektive Konzentration
ECHA: Europäische Chemikalienagentur
EINECS: Europäisches Verzeichnis der auf dem Markt vorhandenen chemischen Stoffe
ES: Expositionsszenarium
GefStoffVO: Gefahrstoffverordnung
GHS: Global harmonisiertes System zur Einstufung und Kennzeichnung von Chemikalien
IARC: Internationales Krebsforschungszentrum
IATA: Internationale Flug-Transport-Vereinigung (IATA)
IC50: Mittlere Inhibitorkonzentration
IMDG: Gefahrgutkennzeichnung für gefährliche Güter im Seeschiffsverkehr (IMDG-Code)
LC50: Letale Konzentration für 50 Prozent der Testpopulation
LD50: Letale Dosis für 50 Prozent der Testpopulation
LDLo: Niedrige letale Dosis
N.A.: Nicht anwendbar
N/A: Nicht anwendbar
N/D: Nicht definiert/Nicht verfügbar
N.D.: Nicht verfügbar
NIOSH: National Institute for Occupational Safety and Health
NOAEL: Dosis ohne beobachtbare schädliche Wirkung
OSHA: Occupational Safety and Health Administration
PBT: persistent, bioakkumulativ und giftig
PGK: Verpackungsvorschrift
PNEC: Abgeschätzte Nicht-Effekt-Konzentration (PNEC-Wert)
PSG: Passagiere
RID: Regelung zur internationalen Beförderung gefährlicher Güter im Schienenverkehr
STEL: Grenzwert für Kurzzeitexposition
STOT: Zielorgan-Toxizität
TLV: Arbeitsplatzgrenzwert
TLV-TWA: Schwellenwert für zeitgemittelten 8-Stunden-Zag (TWATLV) (ACGIH-Standard)
vPvB: sehr persistent, sehr bioakkumulativ
WGK: Wassergefährdungsklasse

Ethyl acetate

Substance identification

Chemical Name: Ethyl acetate

CAS number: 141-78-6

ETHYL ACETATE

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

5.1. USE AT INDUSTRIAL SITES

Environment

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

Worker

SC 2: Generalized exposures (closed systems) PROC1

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

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

SC 5: Mixing operations, Generalized exposures PROC3

SC 6: Film formation, air drying PROC4

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

SC 8: Spraying (automatic/robotic) PROC7

SC 9: Manual spraying PROC7

SC 10: Material transfers, Non-Specialized site PROC8a

SC 11: Material transfers, Specialized site PROC8b

SC 12: Roller, diffusion, flow application PROC10

SC 13: Immersion, dipping and pouring PROC13

SC 14: Laboratory activities PROC15

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

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

5.2. CONDITIONS OF USE THAT AFFECT EXPOSURE

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

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

Daily amount per site: ≤ 1 t/day

Annual amount per site: ≤ 300 t/year

Organizational and technical measures and conditions

A wastewater treatment plant is expected.

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

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

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

Other conditions affecting environmental exposure

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

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.8. Worker Exposure Control: Industrial spraying (PROC7)

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 95%

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.2.9. Worker Exposure Control: Industrial spraying (PROC7)

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 95%

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 95%

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

5.3. EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

5.3.8. Worker exposure: Industrial spraying (PROC7)

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

5.3.9. Worker exposure: Industrial spraying (PROC7)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

9.1. WIDE DISPERSIVE USE BY PROFESSIONAL WORKERS

Environment

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

Worker

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

9.2. CONDITIONS OF USE THAT AFFECT EXPOSURE

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

Organizational and technical measures and conditions

A wastewater treatment plant is expected.

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

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

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 80%

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 80%

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable respirator.

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

Inhalation - minimum yield of 90%

Other conditions affecting worker exposure

Indoor and outdoor use: Outdoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 90%

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 80%

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable respirator.

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

Inhalation - minimum yield of 90%

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 25 %

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 80%

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

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable gloves tested to EN374.

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 25 %

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

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

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable gloves tested to EN374.

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

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

Wear suitable respirator.

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

Inhalation - minimum yield of 90%

Other conditions affecting worker exposure

Indoor and outdoor use: Outdoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 25 %

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

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

Organizational and technical measures and conditions

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 25 %

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

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

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable respirator.

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

Inhalation - minimum yield of 90%

Other conditions affecting worker exposure

Indoor and outdoor use: Outdoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 100%.

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

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

Organizational and technical measures and conditions

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 25 %

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

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

Organizational and technical measures and conditions

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

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable gloves tested to EN374.

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 5 %

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

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

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable gloves tested to EN374.

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

9.3. EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

12.1. WIDE DISPERSIVE USE BY PROFESSIONAL WORKERS

Environment

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

Worker

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

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

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

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

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

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

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

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

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

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

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

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

SC 14: Cleaning of medical devices PROC4

12.2. CONDITIONS OF USE THAT AFFECT EXPOSURE

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

Organizational and technical measures and conditions

A wastewater treatment plant is expected.

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

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

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

Product features (article)

Covers concentrations up to 25 %

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

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

Organizational and technical measures and conditions

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 25 %

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

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

Organizational and technical measures and conditions

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 25 %

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

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

Organizational and technical measures and conditions

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 25 %

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

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

Organizational and technical measures and conditions

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 25 %

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

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

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable respirator.

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

Inhalation - minimum yield of 90%

Other conditions affecting worker exposure

Indoor and outdoor use: Outdoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 25 %

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

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

Organizational and technical measures and conditions

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 25 %

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

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

Organizational and technical measures and conditions

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 5 %

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

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

Organizational and technical measures and conditions

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 1%.

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

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

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable gloves tested to EN374.

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

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

Other conditions affecting worker exposure

Indoor and outdoor use: Outdoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 5 %

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

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

Organizational and technical measures and conditions

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 25 %

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 80%

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 25 %

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

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

Conditions and measures for personal protection, hygiene and health assessment

Wear suitable respirator.

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

Inhalation - minimum yield of 90%

Other conditions affecting worker exposure

Indoor and outdoor use: Outdoor use

Temperature: Process temperature up to 40°C is assumed

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

Product features (article)

Covers concentrations up to 25 %

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

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

Organizational and technical measures and conditions

Local exhaust ventilation

Inhalation - minimum yield of 80%

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

Other conditions affecting worker exposure

Indoor and outdoor use: Indoor use

Temperature: Process temperature up to 40°C is assumed

12.3. EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

n-butyl acetate

Substance identification

Chemical Name: n-butyl acetate

CAS number: 123-86-4

Date - Version: 07/06/2017 10.0

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

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

EXPOSURE CONTROL AND RISK MANAGEMENT MEASURES

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: CEPE SPERC4.1a.v1

Operating conditions

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

Minimum emission days per year: 225

Emission factor to air: 0.8%

Emission factor in water: 2%

Emission factor in soil: 0%

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

Freshwater dilution factor: 10

Marine water dilution factor: 100

Risk management measures

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

Type of treatment plant: Municipal sewage treatment plant.

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

Exposure estimation and reference to its source

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

Risk Characterization Ratio (RCR): 0.925355

Risk from environmental exposure is driven by soil.

Maximum safe use amount: 1080.7 kg/day

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC7: Industrial spray application

Area of use: Industrial

Operating conditions

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

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

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

Indoor/Outdoor: Internal use

Risk management measures

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

Exposure estimation and reference to its source

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

Guidance for downstream users

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

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC10: Application with rollers or brushes

Area of use: Industrial

Operating conditions

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

Risk management measures

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

Exposure estimation and reference to its source

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

Guidance for downstream users

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

EXPOSURE SCENARIO CONSIDERED

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

Area of use: Industrial

Operating conditions

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

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

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

Indoor/Outdoor: Internal use

Risk management measures

Forced local ventilation. Effectiveness: 90%

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

Exposure estimation and reference to its source

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

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

Risk Characterization Ratio (RCR): 0.124675

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

Exposure estimation: 24.1996 mg/m³

Risk Characterization Ratio (RCR): 0.080665

Guidance for downstream users

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

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

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

EXPOSURE CONTROL AND RISK MANAGEMENT MEASURES

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: CEPE SPERC4.1a.v1

Operating conditions

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

Minimum emission days per year: 225

Emission factor to air: 0.8%

Emission factor in water: 2%

Emission factor in soil: 0%

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

Freshwater dilution factor: 10

Marine water dilution factor: 100

Risk management measures

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

Type of treatment plant: Municipal sewage treatment plant.

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

Exposure estimation and reference to its source

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

Risk Characterization Ratio (RCR): 0.925355

Risk from environmental exposure is driven by soil.

Maximum safe use amount: 1080.7 kg/day

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC7: Industrial spray application

Area of use: Industrial

Operating conditions

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

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

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

Indoor/Outdoor: Internal use

Risk management measures

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

Minimize manual tasks.

Daily general cleaning of equipment and work area.

Regular inspection and maintenance of equipment and machinery.

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

Avoid frequent and direct contact with the substance.

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

Avoid splashes.

Make sure the spray booth is used.

Wear suitable clothing.

Exposure estimation and reference to its source

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

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

Risk Characterization Ratio (RCR): 0.38961

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

Guidance for downstream users

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

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC10: Application with rollers or brushes

Area of use: Industrial

Operating conditions

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

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

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

Indoor/Outdoor: Internal use

Risk management measures

Forced local ventilation. Effectiveness: 90%

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

Exposure estimation and reference to its source

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

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

Risk Characterization Ratio (RCR): 0.249351

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

Exposure estimation: 24.1996 mg/m³

Risk Characterization Ratio (RCR): 0.080665

Guidance for downstream users

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

EXPOSURE SCENARIO CONSIDERED

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

Area of use: Industrial

Operating conditions

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

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

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

Indoor/Outdoor: Internal use

Risk management measures

Forced local ventilation. Effectiveness: 90%

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

Exposure estimation and reference to its source

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

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

Risk Characterization Ratio (RCR): 0.124675

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

Exposure estimation: 24.1996 mg/m³

Risk Characterization Ratio (RCR): 0.080665

Guidance for downstream users

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

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

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

EXPOSURE CONTROL AND RISK MANAGEMENT MEASURES

EXPOSURE SCENARIO CONSIDERED

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

Operating conditions

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

Minimum emission days per year: 225

Emission factor to air: 99%

Emission factor in water: 1%

Emission factor in soil: 0%

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

Freshwater dilution factor: 10

Marine water dilution factor: 100

Risk management measures

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

Type of treatment plant: Municipal sewage treatment plant.

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

Exposure estimation and reference to its source

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

Risk Characterization Ratio (RCR): 0.012923

Risk from environmental exposure is driven by freshwater sediment.

Maximum safe use amount: 1934.6 kg/giorno

EXPOSURE SCENARIO CONSIDERED

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

Operating conditions

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

Minimum emission days per year: 225

Emission factor to air: 98%

Emission factor in water: 2%

Emission factor in soil: 0%

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

Freshwater dilution factor: 10

Marine water dilution factor: 100

Risk management measures

Type of treatment plant: Municipal sewage treatment plant.

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

Exposure estimation and reference to its source

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

Risk Characterization Ratio (RCR): 0.092422

Risk from environmental exposure is driven by soil.

Maximum safe use amount: 1082 kg/day

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC10: Application with rollers or brushes

Area of use: Professional

Operating conditions

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

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

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

Indoor/Outdoor: Internal use

Risk management measures

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

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

Exposure estimation and reference to its source

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

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

Risk Characterization Ratio (RCR): 0.249351

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

Exposure estimation: 145.1979 mg/m³

Risk Characterization Ratio (RCR): 0.483993

Guidance for downstream users

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

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC11: Non-industrial spray application

Area of use: Professional

Operating conditions

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

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

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

Indoor/Outdoor: Internal use

Risk management measures

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

Minimize manual tasks.

Daily general cleaning of equipment and work area.

Regular inspection and maintenance of equipment and machinery.

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

Avoid frequent and direct contact with the substance.

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

Avoid splashes.

Make sure the spray booth is used.

Wear suitable clothing.

Exposure estimation and reference to its source

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

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

Risk Characterization Ratio (RCR): 0.974026

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

Exposure estimation: 0.0001 mg/m³

Risk Characterization Ratio (RCR): 0.000001

Guidance for downstream users

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

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC11: Non-industrial spray application

Area of use: Professional

Operating conditions

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

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

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

Indoor/Outdoor: Internal use

Risk management measures

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

Minimize manual tasks.

Avoid frequent and direct contact with the substance.

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

Daily general cleaning of equipment and work area.

Regular control and maintenance of equipment and machinery.

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

Avoid splashes.

Use an adequately effective local ventilation system.

Wear suitable clothing.

Exposure estimation and reference to its source

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

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

Risk Characterization Ratio (RCR): 0.438312

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

Exposure estimation: 153 mg/m³

Risk Characterization Ratio (RCR): 0.51

Guidance for downstream users

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

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC11: Non-industrial spray application

Area of use: Professional

Operating conditions

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

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

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

Indoor/Outdoor: Internal use

Risk management measures

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

Minimize manual tasks.

Avoid frequent and direct contact with the substance.

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

Daily general cleaning of equipment and work area.

Regular inspection and maintenance of equipment and machinery.

Avoid splashes.

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

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

Wear suitable clothing.

Exposure estimation and reference to its source

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

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

Risk Characterization Ratio (RCR): 0.438312

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

Exposure estimation: 116 mg/m³

Risk Characterization Ratio (RCR): 0.386667

Guidance for downstream users

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

EXPOSURE SCENARIO CONSIDERED

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

Area of use: Professional

Operating conditions

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

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/m³

Risk Characterization Ratio (RCR): 0.483993

Guidance for downstream users

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

EXPOSURE SCENARIO CONSIDERED

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

Area of use: Professional

Operating conditions

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

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/m³

Risk Characterization Ratio (RCR): 0.225863

Guidance for downstream users

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

EXPOSURE SCENARIO CONSIDERED

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

Area of use: Professional

Operating conditions

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

Physical state: liquid

Vapor pressure of the substance during use: 1120Pa

Process temperature: 20°C

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

Indoor/Outdoor: Internal use

Risk management measures

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

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

Exposure estimation and reference to its source

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

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

Risk Characterization Ratio (RCR): 0.257143

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

Exposure estimation: 145.1979 mg/m³

Risk Characterization Ratio (RCR): 0.483993

Guidance for downstream users

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