

PRAEPAGEN HY

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Chiave sostanza: SXR004885

Data revisione: 19.06.2015

Versione : 9 - 0 / 1

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SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

1.1. Identificatore del prodotto

Nome commerciale

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Numero materiale: 107829

1.2. Usi pertinenti identificati della sostanza o miscela e usi sconsigliati

Usi pertinenti identificati della sostanza o miscela

Settore industriale: Pulizia Industriale & Istituzionale

Tipo di impiego: Materia prima per detergenti

Scenari di esposizione: vedere allegato

1.3. Informazioni sul fornitore della scheda di dati di sicurezza

Identificazione della società

Clariant Produkte (Deutschland) GmbH

65926 Frankfurt am Main

Nr. telefono : +49 69 305 18000

Informazioni sulla sostanza/miscela

BU Industrial & Consumer Specialties

Product Stewardship

E-mail: SDS.Europe@clariant.com

1.4. Numero telefonico di emergenza

00800-5121 5121 (24 h)

SEZIONE 2: Identificazione dei pericoli

2.1. Classificazione della sostanza o della miscela

Classificazione secondo il Regolamento CLP (Regolamento (CE) N. 1272/2008 e successive modifiche)

Classe di pericolo	Categoria di pericolo	Frase H
Tossicità acuta	Categoria 4	Nocivo se ingerito.
Corrosione cutanea	Categoria 1C	Provoca gravi ustioni cutanee e gravi lesioni oculari.
Tossicità specifica per organi bersaglio - esposizione ripetuta	Categoria 2	Può provocare danni agli organi in caso di esposizione prolungata o ripetuta.

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Tossicità acuto per l'ambiente acquatico	Categoria 1	Molto tossico per gli organismi acquatici.
Tossicità cronica per l'ambiente acquatico	Categoria 2	Tossico per gli organismi acquatici con effetti di lunga durata.

2.2. Elementi dell'etichetta

Etichettatura secondo il Regolamento CLP (Regolamento (CE) N. 1272/2008 e successive modifiche)

Pittogramma di pericolo:



Avvertenza:
Pericolo

Indicazioni di pericolo

H302

H314

H373

H410

Nocivo se ingerito.

Provoca gravi ustioni cutanee e gravi lesioni oculari.

Può provocare danni agli organi in caso di esposizione prolungata o ripetuta.

Molto tossico per gli organismi acquatici con effetti di lunga durata.

Consigli di prudenza

P260

P273

P280

P303 + P361 + P353

P304 + P340 + P310

P305 + P351 + P338

Non respirare la polvere/ i fumi/ i gas/ la nebbia/ i vapori/ gli aerosol.

Non disperdere nell'ambiente.

Indossare guanti/ indumenti protettivi/ Proteggere gli occhi/ il viso.

IN CASO DI CONTATTO CON LA PELLE (o con i capelli):
togliere immediatamente tutti gli indumenti contaminati.
Sciacquare la pelle/fare una doccia.

IN CASO DI INALAZIONE: trasportare l'infortunato all'aria aperta e mantenerlo a riposo in posizione che favorisca la respirazione. Contattare immediatamente un CENTRO ANTIVELENI o un medico.

IN CASO DI CONTATTO CON GLI OCCHI: sciacquare accuratamente per parecchi minuti. Togliere le eventuali lenti a contatto se è agevole farlo. Continuare a sciacquare.

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2.3. Altri pericoli

Non è noto nessun pericolo addizionale oltre a quelli derivanti dall'etichettatura.

SEZIONE 3: Composizione/informazioni sugli ingredienti

3.2. Miscele

Caratterizzazione chimica

C12-14-(numerazione pari)alchil(idrossietil)dimetil, cloruri - N.CE 931-275-3 (CAS precedente 85736-63-6) in soluzione acquosa (ca. 40%)

Altre indicazioni

Soluzione acquosa di un alchil (idrossietil) dimetil ammonio cloruro - CAS 85736-63-6

Ingredienti pericolosi

N-(2-idrossietil)-N,N-dimetil alchil-C12-14-(numeri pari)-1-ammonio cloruro

Numero CE: 931-275-3

REACH - numero di registrazione in accordo con l'articolo 20 comma 3: 01-2119484688-17-0000, 01-2119484688-17-0001

Classificazione GHS CE

Tossicità acuta	Categoria 4	H302
Corrosione cutanea	Categoria 1C	H314
Tossicità specifica per organi bersaglio - esposizione ripetuta	Categoria 2	H373
Tossicità acuto per l'ambiente acquatico	Categoria 1	H400
Tossicità cronica per l'ambiente acquatico	Categoria 2	H411

Il testo delle frasi H è riportato nella sezione 16.

SEZIONE 4: Misure di primo soccorso

4.1. Descrizione delle misure di primo soccorso

Informazioni generali

Togliersi di dosso immediatamente tutti gli indumenti contaminati.
Mostrare questa scheda di sicurezza al medico curante.

in seguito a contatto con la pelle

In caso di contatto, sciacquare immediatamente la pelle con sapone e molta acqua.

in seguito a contatto con gli occhi

In caso di contatto con gli occhi, lavare immediatamente e abbondantemente con acqua e consultare un medico.

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in seguito ad ingestione

In caso d'ingestione consultare immediatamente il medico e mostrargli il contenitore o l'etichetta.

4.2. Principali sintomi ed effetti, sia acuti che ritardati

Sintomi

Fino ad oggi non è noto alcun sintomo.

Pericoli

Nessun pericolo noto al momento.

4.3. Indicazione della eventuale necessità di consultare immediatamente un medico e di trattamenti speciali

Terapia

Trattare sintomaticamente.

SEZIONE 5: Misure antincendio

5.1. Mezzi di estinzione

Mezzi di estinzione adatti

Spruzzo d'acqua a getto
Schiuma
Anidride carbonica (CO₂)
Polvere asciutta

5.2. Pericoli speciali derivanti dalla sostanza o dalla miscela

In caso di incendio si formano pericolosi gas combustivi: monossido di carbonio (CO)
Ossidi di azoto (NO_x)
Cloruro di idrogeno
I gas combustivi di materiali organici sono classificati in linea di massima come nocivi per le vie respiratorie.

5.3. Raccomandazioni per gli addetti all'estinzione degli incendi

Particolare attrezzatura di protezione per le operazioni antincendio

Apparecchio respiratorio autonomo

SEZIONE 6: Misure in caso di rilascio accidentale

6.1. Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza

Usare indumenti protettivi adatti.

6.2. Precauzioni ambientali

Non gettare i residui nelle fognature.

6.3. Metodi e materiali per il contenimento e per la bonifica

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Asciugare con materiali inerti (ad.es. sabbia, gel di silice, legante per acidi, legante universale, segatura).
Può essere mandato in discarica o incenerito, quando la legislazione locale lo consente.

6.4. Riferimento ad altre sezioni

Ulteriori indicazioni

Per le informazioni sull'utilizzo in sicurezza vedere il punto 7.
Vedere Sezione 8 per i dispositivi di protezione individuale.
Per le informazioni sullo smaltimento vedere il punto 13.

SEZIONE 7: Manipolazione e immagazzinamento

7.1. Precauzioni per la manipolazione sicura

Indicazioni per la sicurezza d'impiego

Manipolare ed aprire il recipiente con cautela.

Misure igieniche

Mantenere lontano da alimenti e bevande.
A fine lavoro pulire a fondo la pelle e averne cura.

Indicazioni contro incendi ed esplosioni

Attenersi alle disposizioni generali di prevenzione incendi.

7.2. Condizioni per l'immagazzinamento sicuro, comprese eventuali incompatibilità

Altre indicazioni sulle condizioni di stoccaggio

- SENSIBILE AL GELO - Se il prodotto, per effetto del freddo, dovesse diventare torbido, ispessirsi o congelare, farlo sciogliere a temperatura ambiente e rimescolarlo brevemente. Il prodotto è quindi riutilizzabile.

7.3. Usi finali specifici

Nessuna raccomandazione ulteriore.

SEZIONE 8: Controllo dell'esposizione/protezione individuale

8.1. Parametri di controllo

Valori limite d'esposizione

I valori limite di esposizione non sono disponibili.

Valori DNEL/DMEL

N-(2-idrossietil)-N,N-dimetil alchil-C12-14-(numeri pari)-1-ammonio cloruro
Numero CE: 931-275-3

Via di esposizione	Gruppo di persone	Durata dell'esposizione/Effetto	Valore	Note
Dermico	Lavoratori	Effetti sistemici a lungo termine	1,25 mg/kg p.c./giorno	DNEL
Inalazione	Lavoratori	Effetti sistemici a lungo termine	2,2 mg/m ³	DNEL

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Dermico	Popolazione generale	Effetti sistemici a lungo termine	0,9 mg/kg p.c./giorno	DNEL
Inalazione	Popolazione generale	Effetti sistemici a lungo termine	3,1 mg/m ³	DNEL
Orale	Popolazione generale	Effetti sistemici a lungo termine	0,9 mg/kg	DNEL
Dermico	Popolazione generale	Effetti locali a lungo termine	0,02 % in miscela (in peso)	DNEL

Valori PNEC

N-(2-idrossietil)-N,N-dimetil alchil-C12-14-(numeri pari)-1-ammonio cloruro

Numero CE: 931-275-3

Comparto ambientale	Gruppo di persone/Durata dell'esposizione/Effetto	Valore
Suolo		0,61 mg/kg peso secco (p.secco)
Impianto di trattamento dei liquami		190 µg/l
Orale		16,7 mg/kg cibo
Acqua dolce		4 µg/l
acqua salata		0,4 µg/l
Acqua (rilascio intermittente)		1,4 µg/l
Sedimento di acqua dolce		4,8 mg/kg peso secco (p.secco)
Sedimento marino		0,48 mg/kg peso secco (p.secco)

8.2. Controlli dell'esposizione

Misure generali di protezione

Evitare il contatto con gli occhi e con la pelle.

Protezione delle mani

Questi tipi di guanti protettivi sono forniti da diversi produttori. Vi preghiamo di verificare le informazioni dettagliate fornite dal produttore, specialmente riguardo allo spessore minimo e alla durata limite minima. Considerare inoltre le condizioni di lavoro particolari nelle quali i guanti sono utilizzati. In caso di esposizione a breve termine (protezione dagli schizzi):

Guanti di gomma nitrile

Durata limite del materiale/guanti: 30 min

Spessore minimo/ guanti: 0,4 mm

Esposizione a lungo termine

Guanti di sicurezza impermeabili in gomma butilica

Durata limite del materiale/guanti: 480 min

Spessore minimo/ guanti: 0,7 mm

Protezione degli occhi

A seconda del rischio, provvedere ad una protezione degli occhi adeguata (occhiali di sicurezza a protezione laterale o a mascherina (goggles) e, se necessario, maschera di sicurezza).

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Protezione del corpo

A seconda del rischio, durante la manipolazione di sostanze corrosive, devono essere indossati anche grembiuli, stivali o indumenti protettivi di materiale idoneo (ad esempio rivestiti di gomma o PVC).

Per dettagli, vedere la norma BG numero 595.

SEZIONE 9: Proprietà fisiche e chimiche

9.1. Informazioni sulle proprietà fisiche e chimiche fondamentali

Stato fisico:	liquido
Forma	Liquido
Granulometria: :	Non applicabile
Colore	giallo chiaro
Odore	caratteristico/a
Soglia olfattiva:	non determinato
Valore di pH	5,5 - 8,5 (20 °C, 10 g/l)
punto fluidico :	0 °C Metodo : ISO 3016
Punto di ebollizione :	non determinato
Punto di infiammabilità	> 100 °C Metodo : DIN/ISO 2592 (vaso aperto)
Velocità di evaporazione	non determinato
Limite d'esplosività inferiore	Non applicabile
Limite d'esplosività superiore	Non applicabile
Classe di combustione	Non applicabile
Energia minima di autoaccensione:	non determinato
Tensione di vapore	circa 23 hPa (20 °C) Corrisponde alla tensione di vapore dell'acqua.
Densità relativa del vapore riferita all'aria	non determinato
Solubilità in acqua	solubile I dati si riferiscono al componente attivo.
Solubile in ...	grasso non determinato
Coefficiente di ripartizione n-Ottanolo/Acqua (log Pow)	2,3 L'informazione si riferisce al componente principale.
Temperatura di autoaccensione (liquidi/gas)	Non applicabile

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Temperatura di autoaccensione (solidi)	Non applicabile
Decomposizione termica	circa 247 °C Metodo : termogravimetria La sostanza o la miscela non è classificata come auto-reattiva.
Viscosità (dinamica) :	circa 100 mPa.s (20 °C)
Viscosità (cinematica) :	non determinato
Proprietà esplosive:	Esplosivo secondo le regolamentazioni EU per la fornitura: L'informazione si riferisce al componente principale., La sostanza non contiene nessun gruppo chimico associato a proprietà esplosive.
Proprietà comburenti:	L'informazione si riferisce al componente principale. Non ci sono gruppi chimici associabili a proprietà ossidanti presenti nella molecola.

9.2. Altre informazioni

Densità	0,9837 g/cm ³ (20 °C) Metodo : DIN EN ISO 12185 0,9740 g/cm ³ (40 °C) Metodo : DIN EN ISO 12185 0,9626 g/cm ³ (60 °C) Metodo : DIN EN ISO 12185
Massa volumica apparente	Non applicabile
Tensione superficiale	24,9 mN/m

SEZIONE 10: Stabilità e reattività

10.1. Reattività

Vedere la sezione 10.3 "Possibilità di reazioni pericolose"

10.2. Stabilità chimica

Stabile

10.3. Possibilità di reazioni pericolose

Non si conosce nessuna reazione pericolosa se usato in condizioni normali.
Stabile

10.4. Condizioni da evitare

Conservare lontano da acidi forti.

10.5. Materiali incompatibili

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Non noto

10.6. Prodotti di decomposizione pericolosi

amino-composti

SEZIONE 11: Informazioni tossicologiche

11.1. Informazioni sugli effetti tossicologici

Informazioni relative al prodotto:

Tossicità orale acuta	Stima della tossicità acuta 1.250 mg/kg Metodo : Metodo di calcolo
Tossicità dermale acuta	Studio non realizzato poiché la sostanza è corrosiva.
Tossicità inalatoria acuta	Studio non realizzato poiché la sostanza è corrosiva.
Irritazione degli occhi	Studio non realizzato poiché la sostanza è corrosiva.
Sensibilizzazione	Studio non realizzato poiché la sostanza è corrosiva.
Tossicità genetica in vitro:	Tipo di test: Test di ames Sistema di test: Salmonella typhimurium Attivazione metabolica: con e senza Risultato: Negativo con e senza attivazione metabolica Metodo : Linee Guida 471 per il Test dell'OECD Risultato del test ottenuto dalla miscela. Tipo di test: Test di aberrazione cromosomica Sistema di test: V79 cellule (fibroblasti embrionali dei polmoni) dei criceti cinesi Attivazione metabolica: con e senza Risultato: Negativo con e senza attivazione metabolica Metodo : Linee Guida 473 per il Test dell'OECD Risultato del test ottenuto dalla miscela.
Valutazione della mutagenicità:	Basandosi sulla valutazione di diversi test di mutagenesi si può considerare che il prodotto non sia mutagenico. L'informazione si riferisce al componente principale.
Valutazione della cancerogenicità:	Non contiene ingredienti inclusi nella lista dei prodotti cancerogeni
Valutazione della tossicità riproduttiva:	Non ci si attende nessuna tossicità riproduttiva. L'informazione si riferisce al componente principale.
Valutazione della teratogenicità:	Nella sperimentazione animale non sono state rilevate indicazioni su effetti tossici per la riproduzione.
Tossicità specifica per organi bersaglio (STOT) - esposizione singola:	Basandosi sui dati disponibili, i criteri di classificazione non sono soddisfatti.

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Tossicità specifica per organi bersaglio (STOT) - esposizione ripetuta: Via di esposizione: Orale
Organi bersaglio: Tratto gastrointestinale

Rischio di aspirazione:
nessun dato disponibile

Informazioni relative ai componenti: N-(2-idrossietil)-N,N-dimetil alchil-C12-14-(numeri pari)-1-ammonio cloruro

Tossicità orale acuta DL50 > 300 - 2.000 mg/kg (Ratto)
Metodo : Linee Guida 401 per il Test dell'OECD

Tossicità dermale acuta Studio non realizzato poiché la sostanza è corrosiva.

Tossicità inalatoria acuta Studio non realizzato poiché la sostanza è corrosiva.

Irritazione della pelle Corrosivo (4 h, Su coniglio)
Metodo : Linee Guida 404 per il Test dell'OECD

Irritazione degli occhi Studio non realizzato poiché la sostanza è corrosiva.

Sensibilizzazione Studio non realizzato poiché la sostanza è corrosiva.
Non si conoscono effetti sensibilizzanti

Tossicità per dosi ripetute: Via di somministrazione: orale (cibo)
NOAEL: 75 mg/kg (Tempo di esposizione: 90 d, Frequenza del trattamento: continuously, Dose: 15 - 50 - 75 mg/kg, Ratto, maschio e femmina)
Metodo : OPPTS 870.3100
Fonte : European Chemicals Agency (ECHA)

Tossicità genetica in vitro: Tipo di test: Test di ames
Sistema di test: Salmonella typhimurium
Concentrazione: 0,0016 - 1,6 µg/plate
Attivazione metabolica: con e senza
Risultato: negativo
Metodo : Linee Guida 471 per il Test dell'OECD
Tipo di test: Aberrazione cromosomica in vitro
Sistema di test: V79 cellule (fibroblasti embrionali dei polmoni) dei criceti cinesi
Concentrazione: 5 - 200 µg/ml
Attivazione metabolica: con e senza
Risultato: negativo
Metodo : Linee Guida 473 per il Test dell'OECD
Tipo di test: analisi HGPR
Sistema di test: V79 cellule (fibroblasti embrionali dei polmoni) dei criceti cinesi
Concentrazione: 2,5 - 230 µM
Attivazione metabolica: con e senza
Risultato: negativo
Metodo : Linee Guida 476 per il Test dell'OECD

Valutazione della mutagenicità: Basandosi sulla valutazione di diversi test di mutagenesi si può considerare che il prodotto non sia mutagenico.

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Cancerogenicità:	Dal punto di vista scientifico lo studio non è necessario.	
Valutazione della cancerogenicità:	Non applicabile	
Tossicità riproduttiva/teratogenicità:	Via di applicazione: Orale NOAEL: 50 mg/kg (Tempo di esposizione: Gestation days 6-19, Frequenza del trattamento: Once daily, Dose: 25 - 50 - 100 mg/kg, Ratto, femmina) NOAEL (materno): 50 mg/kg (Tempo di esposizione: Gestation days 6-19, Frequenza del trattamento: Once daily, Dose: 25 - 50 - 100 mg/kg, Ratto, femmina) Metodo : Linee Guida 414 per il Test dell'OECD	
Tossicità riproduttiva/fertilità:	Fertilität Lo studio non è necessario da un punto di vista scientifico.	
Valutazione della tossicità riproduttiva:	Non ci si attende nessuna tossicità riproduttiva.	
Valutazione della teratogenicità:	Nessun effetto teratogeno atteso.	
Tossicità specifica per organi bersaglio (STOT) - esposizione singola:	Basandosi sui dati disponibili, i criteri di classificazione non sono soddisfatti.	
Tossicità specifica per organi bersaglio (STOT) - esposizione ripetuta:	Valutazione:	Può provocare danni agli organi in caso di esposizione prolungata o ripetuta.
Rischio di aspirazione:	Non esiste nessuna classificazione per tossicità tramite aspirazione	

SEZIONE 12: Informazioni ecologiche

12.1. Tossicità

Informazioni relative ai componenti: N-(2-idrossietil)-N,N-dimetil alchil-C12-14-(numeri pari)-1-ammonio cloruro

Tossicità per i pesci	CL50 4,2 mg/l (96 h, Danio rerio (pesce zebra)) Metodo : Linee Guida 203 per il Test dell'OECD Fonte : European Chemicals Agency (ECHA) Le indicazioni dell'azione tossica si riferiscono alla concentrazione nominale.
Tossicità per i pesci (cronica)	NOEC 0,16 mg/l (28 d, Danio rerio (pesce zebra)) Controllo analitico: si Metodo : OECD TG 210 Fonte : European Chemicals Agency (ECHA)

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Tossicità per le dafnie	CE50 0,19 mg/l (48 h, Daphnia magna (Pulce d'acqua grande)) Metodo : OECD TG 202 Le indicazioni dell'azione tossica si riferiscono alla concentrazione nominale.
Tossicità per le dafnie (cronica):	NOEC 0,1 mg/l (21 d, Daphnia magna (Pulce d'acqua grande)) Controllo analitico: si Metodo : OECD TG 211 Le indicazioni dell'azione tossica si riferiscono alla concentrazione nominale.
Tossicità per le alghe	NOEC 0,02 mg/l (28 d, altro alghe) Fonte : European Chemicals Agency (ECHA) CE50 (Velocità di crescita) 0,14 mg/l (72 h, Desmodesmus subspicatus) Metodo : OECD TG 201 Le indicazioni dell'azione tossica si riferiscono alla concentrazione nominale.
Tossicità per i batteri	CE50 19 mg/l (3 h, fango attivo, domestico) Metodo : OECD TG 209 Fonte : European Chemicals Agency (ECHA) Le indicazioni dell'azione tossica si riferiscono alla concentrazione nominale. NOEC 1.000 mg/l (28 d, Microrganismo naturale) Metodo : OECD 216 Le indicazioni dell'azione tossica si riferiscono alla concentrazione nominale.
Tossicità sugli organismi del suolo:	NOEC 125 mg/kg (56 d, Eisenia fetida (lombrichi)) Metodo : Linee Guida 222 per il Test dell'OECD Le indicazioni dell'azione tossica si riferiscono alla concentrazione nominale. (altri artropodi che vivono nel suolo) Lo studio non è necessario da un punto di vista scientifico.
Tossicità per le piante terrestri:	NOEC 3,2 mg/kg (14 d, Lactuca sativa (lattuga)) Metodo : OECD - linea guida 208 Fonte : European Chemicals Agency (ECHA) Le indicazioni dell'azione tossica si riferiscono alla concentrazione nominale. NOEC 3,2 mg/kg (14 d, Avena sativa (avena)) Metodo : OECD - linea guida 208 Fonte : European Chemicals Agency (ECHA) Le indicazioni dell'azione tossica si riferiscono alla concentrazione nominale.
Tossicità su altri organismi rilevanti per l'ambiente:	(altro volatili) Non applicabile

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Tossicità per i sedimenti: Lo studio non è necessario da un punto di vista scientifico.

12.2. Persistenza e degradabilità

Informazioni relative al prodotto:

Carbonio organico (DOC) 252 mg/g
Metodo : DIN 38409 T.3

Fabbisogno chimico di ossigeno (COD) 767 mg/g
Metodo : DIN 38409-H-41

Informazioni relative ai componenti: N-(2-idrossietil)-N,N-dimetil alchil-C12-14-(numeri pari)-1-ammonio cloruro

Eliminabilità fisico-chimica Rapidamente biodegradabile, in accordo con il test specifico OECD.

Fotodegradazione:
aria
Non applicabile

acqua
Non applicabile

Suolo
Non applicabile

Biodegradabilità 87 % (28 d, Formazione di CO₂ in % sul valore teorico)
Rapidamente biodegradabile.
Metodo : OECD TG 301 B

circa 100 % (26 d, Metodo DOC)
Rapidamente biodegradabile.
Metodo : OECD 303A

12.3. Potenziale di bioaccumulo

Informazioni relative al prodotto:

Bioaccumulo: Fattore di bioconcentrazione (BCF): 18
Non ci si attende bioconcentrazione (log del coeff. di ripartizione ottanolo/acqua <= 4).

Informazioni relative ai componenti: N-(2-idrossietil)-N,N-dimetil alchil-C12-14-(numeri pari)-1-ammonio cloruro

Bioaccumulo: Dato il basso valore del coefficiente di ripartizione ottanolo/acqua (LogPow) non si prevede bioaccumulo.

12.4. Mobilità nel suolo

Informazioni relative al prodotto:

Trasporto e distribuzione nei comparti ambientali : La sostanza non evapora in atmosfera dalla superficie dell'acqua.

Informazioni relative ai componenti: N-(2-idrossietil)-N,N-dimetil alchil-C12-14-(numeri pari)-1-ammonio cloruro

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**Trasporto e distribuzione nei
comparti ambientali :** adsorbimento (acqua - suolo)
Log Koc: <= 5
Metodo : Linee Guida 106 per il Test dell'OECD
Non si prevede adsorbimento nel suolo.

Comportamento nei settori ambientali
non disponibile

12.5. Risultati della valutazione PBT e vPvB

Informazioni relative al prodotto:

Considerando tutti i dati disponibili di tossicità e di ecotossicità, si può concludere che gli ingredienti della miscela qui descritta non soddisfano i criteri per essere classificati come PBT o vPvB.

Informazioni relative ai componenti: N-(2-idrossietil)-N,N-dimetil alchil-C12-14-(numeri pari)-1-ammonio cloruro

La sostanza non soddisfa i criteri PBT (persistente, bioaccumulabile e tossica) o vPvB (molto persistente e molto accumulabile).

12.6. Altri effetti avversi

Informazioni relative al prodotto:

Altre informazioni ecotossicologiche

Il prodotto non deve entrare nelle fognature, corsi d'acqua o suolo.

Informazioni relative ai componenti: N-(2-idrossietil)-N,N-dimetil alchil-C12-14-(numeri pari)-1-ammonio cloruro

Altre informazioni ecotossicologiche

Il prodotto non deve entrare nelle fognature, corsi d'acqua o suolo.

SEZIONE 13: Considerazioni sullo smaltimento

13.1. Metodi di trattamento dei rifiuti

Prodotto

Nel rispetto della normativa vigente in materia, inviare ad un impianto autorizzato alla termodistruzione od ad una discarica autorizzata.

Imballo non pulito

Osservare la normativa vigente relativa al riciclaggio e allo smaltimento dei materiali di imballaggio usati.

SEZIONE 14: Informazioni sul trasporto

Sezioni da 14.1 a 14.5.

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ADR

No. ONU:	UN 3265
Designazione ufficiale di trasporto	Liquido organico, corrosivo, acido, n.a.s.
Componente/i pericoloso/i	Dimetiletilidrossietilammonio cloruro di acidi grassi
Classe	8
Rischio primario	8
Gruppo d'imballaggio	III
Nr. pericolo	80
Pericoli per l'ambiente:	Disposizione speciale di marcatura: pericoloso per l'ambiente
Osservazioni	Trasporto ammesso

ADN

No. ONU:	UN 3265
Designazione ufficiale di trasporto	Liquido organico, corrosivo, acido, n.a.s.
Componente/i pericoloso/i	Dimetiletilidrossietilammonio cloruro di acidi grassi
Classe	8
Rischio primario	8
Gruppo d'imballaggio	III
Osservazioni	Trasporto ammesso

RID

No. ONU:	UN 3265
Designazione ufficiale di trasporto	Liquido organico, corrosivo, acido, n.a.s.
Componente/i pericoloso/i	Dimetiletilidrossietilammonio cloruro di acidi grassi
Classe	8
Rischio primario	8
Gruppo d'imballaggio	III
Nr. pericolo	80
Pericoli per l'ambiente:	Disposizione speciale di marcatura: pericoloso per l'ambiente
Osservazioni	Trasporto ammesso

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IATA

UN no.	UN 3265
Proper shipping name:	Corrosive liquid, acidic, organic, n.o.s.
Hazard inducer(s):	Fattyalkyl dimethylhydroxyethylammonium chloride
Class:	8
Primary risk:	8
Packing group:	III
Environmental hazards:	Special marking provision: environmentally hazardous
Remarks	Shipment permitted

IMDG

UN no.	UN 3265
Proper shipping name:	Corrosive liquid, acidic, organic, n.o.s.
Hazard inducer(s):	Fattyalkyl dimethylhydroxyethylammonium chloride
Class:	8
Primary risk:	8
Packing group:	III
Remarks	Shipment permitted
Marine pollutant:	Marine Pollutant
EmS :	F-A S-B

14.6. Precauzioni speciali per gli utilizzatori

Vedere le sezioni da 6 a 8 di questa scheda di dati di sicurezza.

14.7. Trasporto alla rinfusa secondo l'Allegato II della MARPOL 73/78 e l'IBC Code (International Bulk Chemicals Code)

Nessun trasporto di rinfuse secondo il codice IBC.

SEZIONE 15: Informazioni sulla regolamentazione

15.1. Norme e legislazione su salute, sicurezza e ambiente specifiche per la sostanza o la miscela

Altre normative

Norme Italiane di carattere generale: D.Lgs. 81 del 9 aprile 2008, DPR 1124 del 30/06/1965, Circolare Ministeriale 46 del 12/06/1979, Circolare Ministeriale 61 del 04/06/1981, D.Lgs. 52 del 03/02/1997, D.Lgs. 65 del 14/03/2003, D.Lgs. 152 del 3 aprile 2006.

Norme Comunitarie di carattere generale: Regolamenti (CE) n. 1907/2006 (REACH) e n. 1272/2008 (CLP), Direttive 67/548/CEE del 27/06/67, 1999/45/CE del 31 maggio 1999 e 89/391/CEE del 12/06/89

Il(i) tensioattivo(i) contenuto(i) in questa miscela è (sono) conforme(i) ai criteri di biodegradabilità stabiliti del Regolamento (CE) n. 648/2004 relativo ai detersivi. Tutti i dati di supporto sono tenuti a disposizione delle autorità competenti degli Stati Membri e saranno forniti su loro esplicita richiesta o su richiesta di un produttore del formulato, alle suddette autorità.

15.2. Valutazione della sicurezza chimica

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Le valutazioni della sicurezza chimica (CSA) sono disponibili per le sostanze contenute in questo prodotto.

SEZIONE 16: Altre informazioni

Tener conto della normativa nazionale e locale.

Elenco dei testi delle indicazioni di pericolo menzionate nella sezione 3 (frasi H):

H302	Nocivo se ingerito.
H314	Provoca gravi ustioni cutanee e gravi lesioni oculari.
H373	Può provocare danni agli organi in caso di esposizione prolungata o ripetuta se ingerito.
H400	Molto tossico per gli organismi acquatici.
H411	Tossico per gli organismi acquatici con effetti di lunga durata.

Legenda

ADN	Accordo europeo relativo al trasporto internazionale delle merci pericolose per vie navigabili interne
ADR	Accordo europeo relativo al trasporto internazionale delle merci pericolose su strada
AOX	Alogeni organici assorbibili
CAS	Chemical Abstracts Service
DMEL	Livello derivato di minimo effetto (sostanze genotossiche)
DNEL	Livello derivato senza effetto
CE50	Concentrazione efficace media
GHS	Sistema mondiale armonizzato
IATA	Associazione Internazionale del Trasporto Aereo
IMDG	Codice Marittimo Internazionale delle Merci Pericolose
CL50	Concentrazione letale 50%
DL50	Dose letale 50%
MARPOL	Convenzione Internazionale per la Prevenzione dell'Inquinamento da parte delle Navi
NOAEC	Concentrazione priva di effetti avversi osservati
NOAEL	Livello privo di effetti avversi osservati
NOEC	Concentrazione priva di effetti osservati
OEL	Limite di esposizione professionale
PBT	Persistenti, Bioaccumulabili, Tossiche
PEC	Concentrazione prevedibile nell'ambiente
PNEC	Concentrazione prevedibile senza effetto
REACH	Registrazione, Valutazione, Autorizzazione e Restrizione dei prodotti chimici
RID	Accordo europeo per il trasporto di merci pericolose su ferrovia
SVHC	Sostanze di estrema preoccupazione
vPvB	Molto persistenti e molto bioaccumulabili

Le presenti informazioni corrispondono alle nostre attuali conoscenze e con esse si intende fornire una descrizione generale dei nostri prodotti e delle loro applicazioni. Clariant non presta garanzia alcuna, espressa o implicita, circa l'accuratezza, l'adeguatezza, la completezza o l'esenzione da difetti

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delle informazioni e non assume alcuna responsabilità in connessione a qualsiasi uso delle informazioni, essendo responsabilità dell'utilizzatore dei prodotti Clariant determinare l'idoneità dei medesimi alla loro particolare applicazione. Nulla di quanto incluso in queste informazioni può inficiare in alcun modo i Termini e le Condizioni Generali di Vendita di Clariant, che prevalgono salvo sia diversamente concordato per iscritto. Tutti i diritti di proprietà intellettuale/industriale esistenti debbono essere osservati. Lo status dei nostri prodotti può variare in ragione di possibili modifiche dei prodotti stessi e delle leggi e regolamenti applicabili, sia a livello nazionale che internazionale. Le Schede di dati di sicurezza, che forniscono precauzioni di sicurezza da osservare nella manipolazione e nello stoccaggio dei prodotti Clariant, sono disponibili a richiesta e sono fornite ai sensi di legge. Prima di maneggiare qualunque prodotto, è necessario procurarsi e consultare le informazioni contenute nella Scheda di dati di sicurezza applicabile. Per ulteriori informazioni si prega di contattare Clariant.

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Exposure Scenario(s)

Number	Title
ES 1	Formulation; Washing and cleaning products (including solvent based products), Solid PROC3, PROC5, PROC8b, PROC9, PROC15 - ERC2 Quaternary ammonium compounds, C12-14, even numbered, alkyl(hydroxyethyl) dimethyl, chlorides
ES 2	Formulation; Washing and cleaning products (including solvent based products), Liquid PROC3, PROC5, PROC8b, PROC9, PROC15 - ERC2 Quaternary ammonium compounds, C12-14, even numbered, alkyl(hydroxyethyl) dimethyl, chlorides
ES 3	Industrial use; Washing and cleaning products (including solvent based products), Solid PROC3, PROC5, PROC8b, PROC10, PROC13 - ERC4 Quaternary ammonium compounds, C12-14, even numbered, alkyl(hydroxyethyl) dimethyl, chlorides
ES 4	Industrial use; Washing and cleaning products (including solvent based products), Liquid PROC1, PROC3, PROC5, PROC8b, PROC10, PROC13 - ERC4 Quaternary ammonium compounds, C12-14, even numbered, alkyl(hydroxyethyl) dimethyl, chlorides
ES 5	Professional use; Washing and cleaning products (including solvent based products), Solid PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC13 - ERC8a Quaternary ammonium compounds, C12-14, even numbered, alkyl(hydroxyethyl) dimethyl, chlorides
ES 6	Professional use; Washing and cleaning products (including solvent based products), Liquid PROC1, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC13 - ERC8a Quaternary ammonium compounds, C12-14, even numbered, alkyl(hydroxyethyl) dimethyl, chlorides
ES 7	Consumer use; Washing and cleaning products (including solvent based products), Liquid PC35 - ERC8a Quaternary ammonium compounds, C12-14, even numbered, alkyl(hydroxyethyl) dimethyl, chlorides
ES 8	Consumer use; Washing and cleaning products (including solvent based products), Solid

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PC35 - ERC8a

Quaternary ammonium compounds, C12-14, even numbered, alkyl(hydroxyethyl)
dimethyl, chlorides

1. ES 1: Formulation; Washing and cleaning products (including solvent based products), Solid

1.1. Titles of Contributing scenarios (CS)

Environment	
CS1: Formulation (Formulation of preparations)	ERC2
Workers	
CS2: Formulation (Use in closed batch process (synthesis or formulation))	PROC3
CS3: Formulation (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact))	PROC5
CS4: Formulation (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities)	PROC8b
CS5: Formulation (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities)	PROC8b
CS6: Formulation (Transfer of substance or preparation into small containers (dedicated filling line, including weighing))	PROC9
CS7: Formulation (Transfer of substance or preparation into small containers (dedicated filling line, including weighing))	PROC9
CS8: Formulation (Use as laboratory reagent)	PROC15

1.2. ES 1 Conditions of use affecting exposure

1.2.1 ES 1 - CS 1: Control of environmental exposure: Formulation (Formulation of preparations) (ERC2)

Amount used

Annual amount per site : <= 3200 tonnes/year
Daily amount per site : <= 10670 kg/day
Fraction of regional tonnage used locally : 100 %

Frequency and duration of use

Continuous exposure : 300 days per year

Environment factors not influenced by risk management

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Flow rate of receiving surface
water : 18.000 m3/d

Conditions and measures related to sewage treatment plant:

Type of Sewage Treatment Plant : Municipal STP
Flow rate of sewage treatment
plant effluent : 2.000 m3/d
STP effectiveness : 99 %

Waste management measures

Disposal methods : Dispose of waste or used sacks/containers according to local regulations.

1.2.2 ES 1 - CS 2: Control of worker exposure: Formulation (Use in closed batch process (synthesis or formulation)) (PROC3)

Remarks : Sampling

Product characteristics

Concentration of the Substance in
Mixture/Article : > 25 %

Physical Form (at time of use) : Solid, low dustiness
Remarks : Covers use at ambient temperatures., Covers solid products
only.

Frequency and duration of use

Exposure duration : < 8 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of one hand
Exposed skin surface assumed : 240 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk management measures

Organisational measures to
prevent /limit releases, dispersion
and exposure : Advanced (industrial) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is
implemented
Technical conditions and
measures : Advanced (industrial) exposure controls assumed.
Use in closed batch process (synthesis or formulation)
Provide a basic standard of general ventilation (1 to 3 air
changes per hour) .

Exposure routes : Inhalation
Technical conditions and
measures : Local exhaust ventilation

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Effectiveness (of a measure)	: >= 90 %
Exposure routes	: Dermal
Personal protective measures	: Wear suitable gloves (tested to EN374) and eye protection.
Effectiveness (of a measure)	: >= 80 %
Note	: Moderate hazard Risk management measures are based on qualitative risk characterisation.

1.2.3 ES 1 - CS 3: Control of worker exposure: Formulation (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)) (PROC5)

Product characteristics

Concentration of the Substance in Mixture/Article	: > 25 %
Physical Form (at time of use)	: Solid, low dustiness
Remarks	: Covers use at ambient temperatures., Covers solid products only.

Frequency and duration of use

Exposure duration	: < 8 h
Frequency of use	: per day

Human factors not influenced by risk management

Dermal exposure	: Palm of both hands
Exposed skin surface assumed	: 480 cm ²

Other operational conditions affecting workers exposure

Outdoor / Indoor	: Indoor use
------------------	--------------

Risk management measures

Organisational measures to prevent /limit releases, dispersion and exposure	: Advanced (industrial) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures	: Advanced (industrial) exposure controls assumed. Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Exposure routes	: Inhalation
Technical conditions and measures	: Local exhaust ventilation
Effectiveness (of a measure)	: >= 90 %
Exposure routes	: Dermal
Personal protective measures	: Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Use suitable eye protection.

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Effectiveness (of a measure) : $\geq 95\%$

Note : Moderate hazard
Risk management measures are based on qualitative risk characterisation.

1.2.4 ES 1 - CS 4: Control of worker exposure: Formulation (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) (PROC8b)

Remarks : Product delivery

Product characteristics

Concentration of the Substance in Mixture/Article : $> 25\%$
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : $\leq 40\%$
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 4 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Both hands
Exposed skin surface assumed : 960 cm^2

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Room size : 300 m^3
Ventilation rate per hour : 1

Transfer of liquid products - falling liquids : $> 1000\text{ L/min}$, Used ART model.

Risk management measures

Type of Application (Use) : Splash loading
Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is implemented
Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m).
Handling that reduces contact between product and adjacent air.
Technical conditions and : Advanced (industrial) exposure controls assumed.

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measures	Use in semi-closed process with opportunity for exposure
Exposure routes	: Inhalation
Technical conditions and measures	: Local exhaust ventilation
Effectiveness (of a measure)	: $\geq 50\%$
Exposure routes	: Dermal
Personal protective measures	: Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Use suitable eye protection.
Effectiveness (of a measure)	: $\geq 95\%$
Note	: Moderate hazard Risk management measures are based on qualitative risk characterisation.

1.2.5 ES 1 - CS 5: Control of worker exposure: Formulation (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) (PROC8b)

Remarks : Filling and transfer

Product characteristics

Concentration of the Substance in Mixture/Article : $\geq 5\% - \leq 25\%$

Physical Form (at time of use) : Solid, low dustiness

Remarks : Covers solid products only., Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : < 4 h

Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Both hands

Exposed skin surface assumed : 960 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk management measures

Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures : Advanced (industrial) exposure controls assumed.
Use in semi-closed process with opportunity for exposure
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .

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Exposure routes	: Inhalation
Technical conditions and measures	: Local exhaust ventilation
Effectiveness (of a measure)	: >= 95 %
Exposure routes	: Dermal
Personal protective measures	: Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Use suitable eye protection.
Effectiveness (of a measure)	: >= 95 %
Note	: Moderate hazard Risk management measures are based on qualitative risk characterisation.

1.2.6 ES 1 - CS 6: Control of worker exposure: Formulation (Transfer of substance or preparation into small containers (dedicated filling line, including weighing)) (PROC9)

Remarks : Product delivery

Product characteristics

Concentration of the Substance in Mixture/Article : > 25 %
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : <= 40 %
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 8 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of both hands
Exposed skin surface assumed : 480 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Room size : 300 m³
Ventilation rate per hour : 1

Transfer of liquid products - falling liquids : 100 - 1000 L/min, Used ART model.

Risk management measures

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Type of Application (Use)	: Splash loading
Organisational measures to prevent /limit releases, dispersion and exposure	: Advanced (industrial) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m). Handling that reduces contact between product and adjacent air.
Technical conditions and measures	: Advanced (industrial) exposure controls assumed. Use in semi-closed process with opportunity for exposure
Exposure routes	: Inhalation
Technical conditions and measures	: Local exhaust ventilation
Effectiveness (of a measure)	: >= 50 %
Exposure routes	: Dermal
Personal protective measures	: Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.
Effectiveness (of a measure)	: >= 90 %
Note	: Moderate hazard Risk management measures are based on qualitative risk characterisation.

1.2.7 ES 1 - CS 7: Control of worker exposure: Formulation (Transfer of substance or preparation into small containers (dedicated filling line, including weighing)) (PROC9)

Remarks : Filling and transfer

Product characteristics

Concentration of the Substance in Mixture/Article : >= 5 - <= 25 %

Physical Form (at time of use) : Solid, low dustiness

Remarks : Covers solid products only., Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : < 8 h

Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of both hands

Exposed skin surface assumed : 480 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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Risk management measures

- Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented
- Technical conditions and measures : Advanced (industrial) exposure controls assumed. Use in semi-closed process with opportunity for exposure Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
- Exposure routes : Inhalation
- Technical conditions and measures : Local exhaust ventilation
- Effectiveness (of a measure) : $\geq 90\%$
- Exposure routes : Dermal
- Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.
- Effectiveness (of a measure) : $\geq 90\%$
- Note : Moderate hazard
Risk management measures are based on qualitative risk characterisation.

1.2.8 ES 1 - CS 8: Control of worker exposure: Formulation (Use as laboratory reagent) (PROC15)

Product characteristics

- Concentration of the Substance in Mixture/Article : $> 25\%$
- Physical Form (at time of use) : Solid, low dustiness
- Remarks : Covers solid products only., Covers use at ambient temperatures.

Frequency and duration of use

- Exposure duration : < 4 h
- Frequency of use : per day

Human factors not influenced by risk management

- Dermal exposure : Palm of one hand
- Exposed skin surface assumed : 240 cm^2

Other operational conditions affecting workers exposure

- Outdoor / Indoor : Indoor use

Risk management measures

- Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented

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Technical conditions and measures	:	Advanced (industrial) exposure controls assumed. Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Exposure routes	:	Inhalation
Technical conditions and measures	:	Local exhaust ventilation
Effectiveness (of a measure)	:	>= 90 %
Exposure routes	:	Dermal
Personal protective measures	:	Wear suitable gloves (tested to EN374) and eye protection.
Effectiveness (of a measure)	:	>= 80 %
Note	:	Moderate hazard Risk management measures are based on qualitative risk characterisation.

1.3. ES 1 Exposure estimation and reference to its source

1.3.1 ES 1 - CS 1: Environmental release and exposure: Formulation (Formulation of preparations) (ERC2)

Release route	Release rate	Release estimation method
Water	0,6 kg/d	EUSES v2.1
Air	0 kg/d	EUSES v2.1
Soil	0 kg/d	EUSES v2.1

Protection target	Exposure estimation (based on EUSES v2.1)	RCR
Freshwater	0,000709 mg/l	0,177
Freshwater sediment	0,857 mg/kg dry weight	0,177
Marine water	0,0000691 mg/l	0,173
Marine sediment	0,0853 mg/kg dry weight	0,173
Sewage treatment plant.	0,0030 mg/l	0,0158
Indirect exposure to humans via the environment	0,0000383 mg/kg bw/day	< 0,01
Soil	0,0000081 mg/kg dry weight	< 0,01

1.3.2 ES 1 - CS 2: Worker exposure: Formulation (Use in closed batch process (synthesis or formulation)) (PROC3)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,01 mg/m ³ (ECETOC TRA v3, Tier 1)	< 0,01
Worker - inhalative, long-term	0,01 mg/m ³ (ECETOC TRA v3, Tier 1)	0,01

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- local		
Worker - inhalative, short-term - local	0,04 mg/m ³ (ECETOC TRA v3, Tier 1)	0,04
Worker - dermal, long-term - systemic	0,138 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,11
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,115

1.3.3 ES 1 - CS 3: Worker exposure: Formulation (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)) (PROC5)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,05 mg/m ³ (ECETOC TRA v3, Tier 1)	0,023
Worker - inhalative, long-term - local	0,05 mg/m ³ (ECETOC TRA v3, Tier 1)	0,05
Worker - inhalative, short-term - local	0,2 mg/m ³ (ECETOC TRA v3, Tier 1)	0,2
Worker - dermal, long-term - systemic	0,686 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,548
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,571

1.3.4 ES 1 - CS 4: Worker exposure: Formulation (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) (PROC8b)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,15 mg/m ³ (Used ART model., Tier 2, Raw material delivery)	0,068
Worker - inhalative, long-term - local	0,15 mg/m ³ (Used ART model., Tier 2, Raw material delivery)	0,15
Worker - inhalative, short-term - local	0,3 mg/m ³ (Used ART model., Tier 2, Raw material delivery)	0,3
Worker - dermal, long-term - systemic	0,411 mg/kg bw/day (ECETOC TRA v3, Tier 1, Raw material delivery)	0,329
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,397

1.3.5 ES 1 - CS 5: Worker exposure: Formulation (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) (PROC8b)

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Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,002 mg/m ³ (ECETOC TRA v3, Tier 1, Filling and transfer)	< 0,01
Worker - inhalative, long-term - local	0,002 mg/m ³ (ECETOC TRA v3, Tier 1, Filling and transfer)	< 0,01
Worker - inhalative, short-term - local	0,012 mg/m ³ (ECETOC TRA v3, Tier 1, Filling and transfer)	0,012
Worker - dermal, long-term - systemic	0,247 mg/kg bw/day (ECETOC TRA v3, Tier 1, Filling and transfer)	0,197
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,198

1.3.6 ES 1 - CS 6: Worker exposure: Formulation (Transfer of substance or preparation into small containers (dedicated filling line, including weighing)) (PROC9)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,09 mg/m ³ (Used ART model., Tier 2, Raw material delivery)	0,041
Worker - inhalative, long-term - local	0,09 mg/m ³ (Used ART model., Tier 2, Raw material delivery)	0,09
Worker - inhalative, short-term - local	0,18 mg/m ³ (Used ART model., Tier 2, Raw material delivery)	0,18
Worker - dermal, long-term - systemic	0,686 mg/kg bw/day (ECETOC TRA v3, Tier 1, Raw material delivery)	0,549
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,59

1.3.7 ES 1 - CS 7: Worker exposure: Formulation (Transfer of substance or preparation into small containers (dedicated filling line, including weighing)) (PROC9)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,006 mg/m ³ (ECETOC TRA v3, Tier 1, Filling and transfer)	< 0,01
Worker - inhalative, long-term - local	0,006 mg/m ³ (ECETOC TRA v3, Tier 1, Filling and transfer)	< 0,01
Worker - inhalative, short-term - local	0,024 mg/m ³ (ECETOC TRA v3, Tier 1, Filling and transfer)	0,024
Worker - dermal, long-term - systemic	0,412 mg/kg bw/day (ECETOC TRA v3, Tier 1, Filling and transfer)	0,329
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,332

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1.3.8 ES 1 - CS 8: Worker exposure: Formulation (Use as laboratory reagent) (PROC15)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,006 mg/m ³ (ECETOC TRA v3, Tier 1)	< 0,01
Worker - inhalative, long-term - local	0,006 mg/m ³ (ECETOC TRA v3, Tier 1)	< 0,01
Worker - inhalative, short-term - local	0,04 mg/m ³ (ECETOC TRA v3, Tier 1)	0,04
Worker - dermal, long-term - systemic	0,041 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,033
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,035

1.4. ES 1 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
see section 2 of this exposure scenario.

2. ES 2: Formulation; Washing and cleaning products (including solvent based products), Liquid

2.1. Titles of Contributing scenarios (CS)

Environment	
CS1: Formulation (Formulation of preparations)	ERC2
Workers	
CS2: Formulation (Use in closed batch process (synthesis or formulation))	PROC3
CS3: Formulation (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact))	PROC5
CS4: Formulation (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities)	PROC8b
CS5: Formulation (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities)	PROC8b
CS6: Formulation (Transfer of substance or preparation into small containers (dedicated filling line, including weighing))	PROC9
CS7: Formulation (Transfer of substance or preparation into small containers	PROC9

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(dedicated filling line, including weighing))
CS8: Formulation (Use as laboratory reagent)

PROC15

2.2. ES 2 Conditions of use affecting exposure

2.2.1 ES 2 - CS 1: Control of environmental exposure: Formulation (Formulation of preparations) (ERC2)

Amount used

Annual amount per site : <= 3200 tonnes/year
Daily amount per site : <= 10670 kg/day
Fraction of regional tonnage used locally : 100 %

Frequency and duration of use

Continuous exposure : 300 days per year

Environment factors not influenced by risk management

Flow rate of receiving surface water : 18.000 m³/d

Conditions and measures related to sewage treatment plant:

Type of Sewage Treatment Plant : Municipal STP
Flow rate of sewage treatment plant effluent : 2.000 m³/d
STP effectiveness : 99 %

Waste management measures

Disposal methods : Dispose of waste or used sacks/containers according to local regulations.

2.2.2 ES 2 - CS 2: Control of worker exposure: Formulation (Use in closed batch process (synthesis or formulation)) (PROC3)

Remarks : Sampling

Product characteristics

Concentration of the Substance in Mixture/Article : > 25 %
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : <= 40 %
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
Physical Form (at time of use) : Solid, Powder products

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Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 1 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of one hand
Exposed skin surface assumed : 240 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Room size : 300 m³
Ventilation rate per hour : 1

Transfer of liquid products - falling liquids : 1 - 10 L/min, Used ART model.

Risk management measures

Type of Application (Use) : Splash loading
Open systems
Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures : Advanced (industrial) exposure controls assumed.
Use in closed batch process (synthesis or formulation)
Exposure routes : Dermal
Personal protective measures : Wear suitable gloves (tested to EN374) and eye protection.
Effectiveness (of a measure) : >= 80 %

Note : Moderate hazard
Risk management measures are based on qualitative risk characterisation.

2.2.3 ES 2 - CS 3: Control of worker exposure: Formulation (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)) (PROC5)

Product characteristics

Concentration of the Substance in Mixture/Article : > 25 %
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : <= 40 %
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity
Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

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Frequency and duration of use

Exposure duration : < 8 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of both hands
Exposed skin surface assumed : 480 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Room size : 300 m³
Ventilation rate per hour : 1

Handling of contaminated objects : 1 - 3 m², Activities with open liquid surfaces or open reservoirs - activity with agitated surfaces, Used ART model.

Risk management measures

Type of Application (Use) : Splash loading
Open systems

Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is implemented
Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m).

Technical conditions and measures : Advanced (industrial) exposure controls assumed.

Exposure routes : Inhalation
Technical conditions and measures : Local exhaust ventilation
Effectiveness (of a measure) : >= 50 %

Exposure routes : Dermal
Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Effectiveness (of a measure) : >= 95 %

Note : Moderate hazard
Risk management measures are based on qualitative risk characterisation.

2.2.4 ES 2 - CS 4: Control of worker exposure: Formulation (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) (PROC8b)

Remarks : Product delivery

Product characteristics

Concentration of the Substance in Mixture/Article : > 25 %
ECETOC TRA v3

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Concentration of the Substance in Mixture/Article : <= 40 %
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 4 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Both hands
Exposed skin surface assumed : 960 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Room size : 300 m³
Ventilation rate per hour : 1

Transfer of liquid products - falling liquids : > 1000 L/min, Used ART model.

Risk management measures

Type of Application (Use) : Splash loading
Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is implemented
Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m).
Handling that reduces contact between product and adjacent air.

Technical conditions and measures : Advanced (industrial) exposure controls assumed.
Use in semi-closed process with opportunity for exposure

Exposure routes : Inhalation
Technical conditions and measures : Local exhaust ventilation

Effectiveness (of a measure) : >= 50 %

Exposure routes : Dermal
Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Use suitable eye protection.

Effectiveness (of a measure) : >= 95 %

Note : Moderate hazard
Risk management measures are based on qualitative risk

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characterisation.

2.2.5 ES 2 - CS 5: Control of worker exposure: Formulation (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) (PROC8b)

Remarks : Filling and transfer

Product characteristics

Concentration of the Substance in Mixture/Article : $\geq 5 - \leq 25$ %
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : ≤ 10 %
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 4 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Both hands
Exposed skin surface assumed : 960 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Room size : 300 m³
Ventilation rate per hour : 1

Transfer of liquid products - falling liquids : > 1000 L/min, Used ART model.

Risk management measures

Type of Application (Use) : Splash loading
Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is implemented
Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m).
Handling that reduces contact between product and adjacent air.

Technical conditions and measures : Advanced (industrial) exposure controls assumed.
Use in semi-closed process with opportunity for exposure

Exposure routes : Inhalation
Technical conditions and : Local exhaust ventilation

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measures

Effectiveness (of a measure) : $\geq 50\%$

Exposure routes

: Dermal

Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Use suitable eye protection.

Effectiveness (of a measure) : $\geq 95\%$

Note

: Moderate hazard
Risk management measures are based on qualitative risk characterisation.

2.2.6 ES 2 - CS 6: Control of worker exposure: Formulation (Transfer of substance or preparation into small containers (dedicated filling line, including weighing)) (PROC9)

Remarks : Product delivery

Product characteristics

Concentration of the Substance in Mixture/Article : $> 25\%$
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : $\leq 40\%$
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity

Remarks : Substances in preparations / mixtures

Physical Form (at time of use) : Solid, Powder products

Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 8 h

Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of both hands

Exposed skin surface assumed : 480 cm^2

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Room size : 300 m^3

Ventilation rate per hour : 1

Transfer of liquid products - falling liquids : $100 - 1000\text{ L/min}$, Used ART model.

Risk management measures

Type of Application (Use) : Splash loading

Organisational measures to prevent /limit releases, dispersion : Advanced (industrial) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is

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and exposure	implemented Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m). Handling that reduces contact between product and adjacent air.
Technical conditions and measures	: Advanced (industrial) exposure controls assumed. Use in semi-closed process with opportunity for exposure
Exposure routes	: Inhalation
Technical conditions and measures	: Local exhaust ventilation
Effectiveness (of a measure)	: $\geq 50\%$
Exposure routes	: Dermal
Personal protective measures	: Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.
Effectiveness (of a measure)	: $\geq 90\%$
Note	: Moderate hazard Risk management measures are based on qualitative risk characterisation.

2.2.7 ES 2 - CS 7: Control of worker exposure: Formulation (Transfer of substance or preparation into small containers (dedicated filling line, including weighing)) (PROC9)

Remarks : Filling and transfer

Product characteristics

Concentration of the Substance in Mixture/Article : $\geq 5 - \leq 25\%$
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : $\leq 10\%$
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 8 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of both hands
Exposed skin surface assumed : 480 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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Room size : 300 m3
Ventilation rate per hour : 1

Transfer of liquid products - falling liquids : 100 - 1000 L/min, Used ART model.

Risk management measures

Type of Application (Use) : Splash loading
Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is implemented
Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m).
Handling that reduces contact between product and adjacent air.

Technical conditions and measures : Advanced (industrial) exposure controls assumed.
Use in semi-closed process with opportunity for exposure

Exposure routes : Inhalation
Technical conditions and measures : Local exhaust ventilation
Effectiveness (of a measure) : >= 50 %

Note : Moderate hazard
Risk management measures are based on qualitative risk characterisation.

Exposure routes : Dermal
Personal protective measures : Wear suitable gloves (tested to EN374) and eye protection.
Effectiveness (of a measure) : >= 80 %

2.2.8 ES 2 - CS 8: Control of worker exposure: Formulation (Use as laboratory reagent) (PROC15)

Product characteristics

Concentration of the Substance in Mixture/Article : > 25 %
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : <= 40 %
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 4 h
Frequency of use : per day

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Human factors not influenced by risk management

Dermal exposure : Palm of one hand
Exposed skin surface assumed : 240 cm²
Remarks : Activities with open liquid surfaces or open reservoirs - activity with undisturbed surfaces (no aerosol formation)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Ventilation rate per hour : 1

Handling of contaminated objects : 0,1 - 0,3 m², Activities with open liquid surfaces or open reservoirs - activity with undisturbed surfaces (no aerosol formation), Used ART model.

Risk management measures

Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures : Advanced (industrial) exposure controls assumed.

Exposure routes : Inhalation
Technical conditions and measures : Handle in a fume cupboard or under extract ventilation.
Effectiveness (of a measure) : >= 99 %

Note : Moderate hazard
Risk management measures are based on qualitative risk characterisation.

Exposure routes : Dermal
Personal protective measures : Wear suitable gloves (tested to EN374) and eye protection.
Effectiveness (of a measure) : >= 80 %

2.3. ES 2 Exposure estimation and reference to its source

2.3.1 ES 2 - CS 1: Environmental release and exposure: Formulation (Formulation of preparations) (ERC2)

Release route	Release rate	Release estimation method
Water	0,6 kg/d	EUSES v2.1
Air	0 kg/d	EUSES v2.1
Soil	0 kg/d	EUSES v2.1

Protection target	Exposure estimation (based on EUSES v2.1)	RCR

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Freshwater	0,000709 mg/l	0,177
Freshwater sediment	0,857 mg/kg dry weight	0,177
Marine water	0,0000691 mg/l	0,173
Marine sediment	0,0853 mg/kg dry weight	0,173
Sewage treatment plant.	0,0030 mg/l	0,0158
Indirect exposure to humans via the environment	0,0000383 mg/kg bw/day	< 0,01
Soil	0,0000081 mg/kg dry weight	< 0,01

2.3.2 ES 2 - CS 2: Worker exposure: Formulation (Use in closed batch process (synthesis or formulation)) (PROC3)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,021 mg/m ³ (Used ART model., Tier 2)	< 0,01
Worker - inhalative, long-term - local	0,021 mg/m ³ (Used ART model., Tier 2)	0,021
Worker - inhalative, short-term - local	0,17 mg/m ³ (Used ART model., Tier 2)	0,17
Worker - dermal, long-term - systemic	0,028 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,022
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,032

2.3.3 ES 2 - CS 3: Worker exposure: Formulation (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)) (PROC5)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,34 mg/m ³ (Used ART model., Tier 2)	0,154
Worker - inhalative, long-term - local	0,34 mg/m ³ (Used ART model., Tier 2)	0,34
Worker - inhalative, short-term - local	0,68 mg/m ³ (Used ART model., Tier 2)	0,68
Worker - dermal, long-term - systemic	0,686 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,548
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,703

2.3.4 ES 2 - CS 4: Worker exposure: Formulation (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) (PROC8b)

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Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,15 mg/m ³ (Used ART model., Tier 2, Raw material delivery)	0,068
Worker - inhalative, long-term - local	0,15 mg/m ³ (Used ART model., Tier 2, Raw material delivery)	0,15
Worker - inhalative, short-term - local	0,3 mg/m ³ (Used ART model., Tier 2, Raw material delivery)	0,3
Worker - dermal, long-term - systemic	0,411 mg/kg bw/day (ECETOC TRA v3, Tier 1, Raw material delivery)	0,329
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,397

2.3.5 ES 2 - CS 5: Worker exposure: Formulation (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) (PROC8b)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,038 mg/m ³ (Used ART model., Tier 2, Filling and transfer)	0,017
Worker - inhalative, long-term - local	0,038 mg/m ³ (Used ART model., Tier 2, Filling and transfer)	0,038
Worker - inhalative, short-term - local	0,076 mg/m ³ (Used ART model., Tier 2, Filling and transfer)	0,076
Worker - dermal, long-term - systemic	0,247 mg/kg bw/day (ECETOC TRA v3, Tier 1, Filling and transfer)	0,197
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,215

2.3.6 ES 2 - CS 6: Worker exposure: Formulation (Transfer of substance or preparation into small containers (dedicated filling line, including weighing)) (PROC9)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,09 mg/m ³ (Used ART model., Tier 2, Raw material delivery)	0,041
Worker - inhalative, long-term - local	0,09 mg/m ³ (Used ART model., Tier 2, Raw material delivery)	0,09
Worker - inhalative, short-term - local	0,18 mg/m ³ (Used ART model., Tier 2, Raw material delivery)	0,18
Worker - dermal, long-term - systemic	0,686 mg/kg bw/day (ECETOC TRA v3, Tier 1, Raw material delivery)	0,549
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,59

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2.3.7 ES 2 - CS 7: Worker exposure: Formulation (Transfer of substance or preparation into small containers (dedicated filling line, including weighing)) (PROC9)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,022 mg/m ³ (Used ART model., Tier 2, Filling and transfer)	< 0,01
Worker - inhalative, long-term - local	0,022 mg/m ³ (Used ART model., Tier 2, Filling and transfer)	0,022
Worker - inhalative, short-term - local	0,044 mg/m ³ (Used ART model., Tier 2, Filling and transfer)	0,044
Worker - dermal, long-term - systemic	0,823 mg/kg bw/day (ECETOC TRA v3, Tier 1, Filling and transfer)	0,659
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,669

2.3.8 ES 2 - CS 8: Worker exposure: Formulation (Use as laboratory reagent) (PROC15)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,00014 mg/m ³ (Used ART model., Tier 2)	< 0,01
Worker - inhalative, long-term - local	0,00014 mg/m ³ (Used ART model., Tier 2)	< 0,01
Worker - inhalative, short-term - local	0,00028 mg/m ³ (Used ART model., Tier 2)	< 0,01
Worker - dermal, long-term - systemic	0,041 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,033
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,033

2.4. ES 2 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
see section 2 of this exposure scenario.

3. ES 3: Industrial use; Washing and cleaning products (including solvent based products), Solid

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3.1. Titles of Contributing scenarios (CS)

Environment	
CS1: Industrial use (Industrial use of processing aids in processes and products, not becoming part of articles)	ERC4
Workers	
CS2: Industrial use (Use in closed batch process (synthesis or formulation))	PROC3
CS3: Industrial use (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact))	PROC5
CS4: Industrial use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities)	PROC8b
CS5: Industrial use (Roller application or brushing)	PROC10
CS6: Industrial use (Treatment of articles by dipping and pouring)	PROC13

3.2. ES 3 Conditions of use affecting exposure

3.2.1 ES 3 - CS 1: Control of environmental exposure: Industrial use (Industrial use of processing aids in processes and products, not becoming part of articles) (ERC4)

Amount used

Annual amount per site : <= 0,09 tonnes/year
Daily amount per site : <= 0,41 kg/day
Fraction of regional tonnage used locally : 10 %

Frequency and duration of use

Continuous exposure : 220 days per year

Environment factors not influenced by risk management

Flow rate of receiving surface water : 18.000 m³/d

Conditions and measures related to sewage treatment plant:

Type of Sewage Treatment Plant : Municipal STP
Flow rate of sewage treatment plant effluent : 2.000 m³/d
STP effectiveness : 99 %

Waste management measures

Disposal methods : Dispose of waste or used sacks/containers according to local regulations.

3.2.2 ES 3 - CS 2: Control of worker exposure: Industrial use (Use in closed batch

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process (synthesis or formulation)) (PROC3)

Product characteristics

Concentration of the Substance in Mixture/Article : $\geq 5 - \leq 25$ %

Physical Form (at time of use) : Solid, low dustiness
Remarks : Covers use at ambient temperatures., Covers solid products only.

Frequency and duration of use

Exposure duration : < 8 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of one hand
Exposed skin surface assumed : 240 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk management measures

Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures : Advanced (industrial) exposure controls assumed. Use in closed batch process (synthesis or formulation) Provide a basic standard of general ventilation (1 to 3 air changes per hour) .

Exposure routes : Dermal
Personal protective measures : Wear suitable gloves (tested to EN374) and eye protection.
Effectiveness (of a measure) : ≥ 80 %

Note : Moderate hazard
Risk management measures are based on qualitative risk characterisation.

3.2.3 ES 3 - CS 3: Control of worker exposure: Industrial use (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)) (PROC5)

Product characteristics

Concentration of the Substance in Mixture/Article : $\geq 5 - \leq 25$ %

Physical Form (at time of use) : Solid, low dustiness
Remarks : Covers use at ambient temperatures., Covers solid products only.

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Frequency and duration of use

Exposure duration : < 8 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of both hands
Exposed skin surface assumed : 480 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk management measures

Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures : Advanced (industrial) exposure controls assumed. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .

Exposure routes : Dermal
Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Use suitable eye protection.

Effectiveness (of a measure) : >= 95 %

Note : Moderate hazard
Risk management measures are based on qualitative risk characterisation.

3.2.4 ES 3 - CS 4: Control of worker exposure: Industrial use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) (PROC8b)

Product characteristics

Concentration of the Substance in Mixture/Article : >= 5 - <= 25 %

Physical Form (at time of use) : Solid, low dustiness
Remarks : Covers use at ambient temperatures., Covers solid products only.

Frequency and duration of use

Exposure duration : < 1 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Both hands
Exposed skin surface assumed : 960 cm²

Other operational conditions affecting workers exposure

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Outdoor / Indoor : Indoor use

Risk management measures

Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures : Advanced (industrial) exposure controls assumed. Provide a basic standard of general ventilation (1 to 3 air changes per hour) . Use in semi-closed process with opportunity for exposure

Exposure routes : Dermal

Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Use suitable eye protection.

Effectiveness (of a measure) : $\geq 95\%$

Note : Moderate hazard
Risk management measures are based on qualitative risk characterisation.

3.2.5 ES 3 - CS 5: Control of worker exposure: Industrial use (Roller application or brushing) (PROC10)

Product characteristics

Concentration of the Substance in Mixture/Article : $\geq 5 - \leq 25\%$
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : $\leq 10\%$
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity

Remarks : Substances in preparations / mixtures

Physical Form (at time of use) : Solid, Powder products

Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 8 h

Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Both hands

Exposed skin surface assumed : 960 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Room size : 300 m³

Ventilation rate per hour : 1

Brush, roller, spreader : > 3 m²/h, Used ART model.

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Risk management measures

- Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented
- Technical conditions and measures : Advanced (industrial) exposure controls assumed.
- Exposure routes : Dermal
- Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Use suitable eye protection.
- Effectiveness (of a measure) : $\geq 95\%$
- Note : Moderate hazard
Risk management measures are based on qualitative risk characterisation.

3.2.6 ES 3 - CS 6: Control of worker exposure: Industrial use (Treatment of articles by dipping and pouring) (PROC13)

Product characteristics

- Concentration of the Substance in Mixture/Article : $\geq 5 - \leq 25\%$
ECETOC TRA v3
- Concentration of the Substance in Mixture/Article : $\leq 10\%$
Used ART model.
- Physical Form (at time of use) : Liquid, Low viscosity
- Remarks : Substances in preparations / mixtures
- Physical Form (at time of use) : Solid, Powder products
- Remarks : Covers solid products only.

Frequency and duration of use

- Exposure duration : < 4 h
- Frequency of use : per day

Human factors not influenced by risk management

- Dermal exposure : Palm of both hands
- Exposed skin surface assumed : 480 cm²

Other operational conditions affecting workers exposure

- Outdoor / Indoor : Indoor use
- Room size : 300 m³
- Ventilation rate per hour : 1
- Handling of contaminated objects : > 3 m², Activities with open liquid surfaces or open reservoirs
- activity with agitated surfaces, Used ART model.

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Risk management measures

- Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented
- Technical conditions and measures : Advanced (industrial) exposure controls assumed.
- Exposure routes : Inhalation
- Technical conditions and measures : Local exhaust ventilation
- Effectiveness (of a measure) : >= 50 %
- Exposure routes : Dermal
- Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.
- Effectiveness (of a measure) : >= 90 %
- Note : Moderate hazard
Risk management measures are based on qualitative risk characterisation.

3.3. ES 3 Exposure estimation and reference to its source

3.3.1 ES 3 - CS 1: Environmental release and exposure: Industrial use (Industrial use of processing aids in processes and products, not becoming part of articles) (ERC4)

Release route	Release rate	Release estimation method
Water	0,41 kg/d	EUSES v2.1
Air	0 kg/d	EUSES v2.1
Soil	0 kg/d	EUSES v2.1

Protection target	Exposure estimation (based on EUSES v2.1)	RCR
Freshwater	0,000616 mg/l	0,154
Freshwater sediment	0,745 mg/kg dry weight	0,154
Marine water	0,0000598 mg/l	0,15
Marine sediment	0,0723 mg/kg dry weight	0,15
Sewage treatment plant.	0,00205 mg/l	0,0108
Indirect exposure to humans via the environment	0,0000332 mg/kg bw/day	< 0,01
Soil	0,0991 mg/kg dry weight	0,163

3.3.2 ES 3 - CS 2: Worker exposure: Industrial use (Use in closed batch process (synthesis or formulation)) (PROC3)

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Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,06 mg/m ³ (ECETOC TRA v3, Tier 1)	0,027
Worker - inhalative, long-term - local	0,06 mg/m ³ (ECETOC TRA v3, Tier 1)	0,06
Worker - inhalative, short-term - local	0,24 mg/m ³ (ECETOC TRA v3, Tier 1)	0,24
Worker - dermal, long-term - systemic	0,083 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,066
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,094

3.3.3 ES 3 - CS 3: Worker exposure: Industrial use (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)) (PROC5)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,21 mg/m ³ (ECETOC TRA v3, Tier 1)	0,095
Worker - inhalative, long-term - local	0,21 mg/m ³ (ECETOC TRA v3, Tier 1)	0,21
Worker - inhalative, short-term - local	0,84 mg/m ³ (ECETOC TRA v3, Tier 1)	0,84
Worker - dermal, long-term - systemic	0,411 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,329
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,425

3.3.4 ES 3 - CS 4: Worker exposure: Industrial use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) (PROC8b)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,012 mg/m ³ (ECETOC TRA v3, Tier 1)	< 0,01
Worker - inhalative, long-term - local	0,012 mg/m ³ (ECETOC TRA v3, Tier 1)	0,012
Worker - inhalative, short-term - local	0,24 mg/m ³ (ECETOC TRA v3, Tier 1)	0,24
Worker - dermal, long-term - systemic	0,082 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,066
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,071

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3.3.5 ES 3 - CS 5: Worker exposure: Industrial use (Roller application or brushing) (PROC10)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,46 mg/m ³ (Used ART model., Tier 2)	0,209
Worker - inhalative, long-term - local	0,46 mg/m ³ (Used ART model., Tier 2)	0,46
Worker - inhalative, short-term - local	0,92 mg/m ³ (Used ART model., Tier 2)	0,92
Worker - dermal, long-term - systemic	0,823 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,658
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,867

3.3.6 ES 3 - CS 6: Worker exposure: Industrial use (Treatment of articles by dipping and pouring) (PROC13)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,34 mg/m ³ (Used ART model., Tier 2)	0,154
Worker - inhalative, long-term - local	0,34 mg/m ³ (Used ART model., Tier 2)	0,34
Worker - inhalative, short-term - local	0,68 mg/m ³ (Used ART model., Tier 2)	0,68
Worker - dermal, long-term - systemic	0,494 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,395
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,549

3.4. ES 3 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
see section 2 of this exposure scenario.

4. ES 4: Industrial use; Washing and cleaning products (including solvent based products), Liquid

4.1. Titles of Contributing scenarios (CS)

Environment	
CS1: Industrial use (Industrial use of processing aids in processes and products, not becoming part of articles)	ERC4
Workers	
CS2: Industrial use (Use in closed process, no likelihood of exposure)	PROC1
CS3: Industrial use (Use in closed batch process (synthesis or formulation))	PROC3
CS4: Industrial use (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact))	PROC5
CS5: Industrial use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities)	PROC8b
CS6: Industrial use (Roller application or brushing)	PROC10
CS7: Industrial use (Treatment of articles by dipping and pouring)	PROC13

4.2. ES 4 Conditions of use affecting exposure

4.2.1 ES 4 - CS 1: Control of environmental exposure: Industrial use (Industrial use of processing aids in processes and products, not becoming part of articles) (ERC4)

Amount used

Annual amount per site	: <= 0,09 tonnes/year
Daily amount per site	: <= 0,41 kg/day
Fraction of regional tonnage used locally	: 10 %

Frequency and duration of use

Continuous exposure	: 220 days per year
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Environment factors not influenced by risk management

Flow rate of receiving surface water	: 18.000 m ³ /d
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Conditions and measures related to sewage treatment plant:

Type of Sewage Treatment Plant	: Municipal STP
Flow rate of sewage treatment plant effluent	: 2.000 m ³ /d
STP effectiveness	: 99 %

Waste management measures

Disposal methods	: Dispose of waste or used sacks/containers according to local regulations.
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4.2.2 ES 4 - CS 2: Control of worker exposure: Industrial use (Use in closed process, no likelihood of exposure) (PROC1)

Remarks : Spraying
Closed systems

Product characteristics

Concentration of the Substance in Mixture/Article : $\geq 5 - \leq 25$ %
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : ≤ 10 %
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 8 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of one hand
Exposed skin surface assumed : 240 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Room size : 300 m³
Ventilation rate per hour : 1

Handling of contaminated objects : > 3 m²

Contamination : > 90 %, Used ART model.

Risk management measures

Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures : Advanced (industrial) exposure controls assumed.
Use in closed process, no likelihood of exposure

Exposure routes : Dermal
Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Use suitable eye protection.

Effectiveness (of a measure) : ≥ 95 %

Note : Moderate hazard
Risk management measures are based on qualitative risk

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characterisation.

4.2.3 ES 4 - CS 3: Control of worker exposure: Industrial use (Use in closed batch process (synthesis or formulation)) (PROC3)

Remarks : Sampling

Product characteristics

Concentration of the Substance in Mixture/Article : $\geq 5 - \leq 25$ %
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : ≤ 10 %
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 1 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of one hand
Exposed skin surface assumed : 240 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Room size : 300 m³
Ventilation rate per hour : 1

Transfer of liquid products - falling liquids : 1 - 10 L/min, Used ART model.

Risk management measures

Type of Application (Use) : Splash loading
Open systems
Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures : Advanced (industrial) exposure controls assumed.
Use in closed batch process (synthesis or formulation)
Exposure routes : Dermal
Personal protective measures : Wear suitable gloves (tested to EN374) and eye protection.
Effectiveness (of a measure) : ≥ 80 %

Note : Moderate hazard
Risk management measures are based on qualitative risk

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characterisation.

4.2.4 ES 4 - CS 4: Control of worker exposure: Industrial use (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)) (PROC5)

Product characteristics

Concentration of the Substance in Mixture/Article	:	>= 5 - <= 25 % ECETOC TRA v3
Concentration of the Substance in Mixture/Article	:	<= 10 % Used ART model.
Physical Form (at time of use) Remarks	:	Liquid, Low viscosity Substances in preparations / mixtures
Physical Form (at time of use) Remarks	:	Solid, Powder products Covers solid products only.

Frequency and duration of use

Exposure duration	:	< 8 h
Frequency of use	:	per day

Human factors not influenced by risk management

Dermal exposure	:	Palm of both hands
Exposed skin surface assumed	:	480 cm ²

Other operational conditions affecting workers exposure

Outdoor / Indoor	:	Indoor use
Room size	:	300 m ³
Ventilation rate per hour	:	1
Handling of contaminated objects	:	1 - 3 m ² , Activities with open liquid surfaces or open reservoirs - activity with agitated surfaces, Used ART model.

Risk management measures

Organisational measures to prevent /limit releases, dispersion and exposure	:	Advanced (industrial) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m).
Technical conditions and measures	:	Advanced (industrial) exposure controls assumed.
Exposure routes	:	Dermal
Personal protective measures	:	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Use suitable eye protection.
Effectiveness (of a measure)	:	>= 95 %
Note	:	Moderate hazard

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Risk management measures are based on qualitative risk characterisation.

4.2.5 ES 4 - CS 5: Control of worker exposure: Industrial use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) (PROC8b)

Product characteristics

- Concentration of the Substance in Mixture/Article : $\geq 5 - \leq 25$ %
ECETOC TRA v3
- Concentration of the Substance in Mixture/Article : ≤ 10 %
Used ART model.
- Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
- Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

- Exposure duration : < 1 h
Frequency of use : per day

Human factors not influenced by risk management

- Dermal exposure : Both hands
Exposed skin surface assumed : 960 cm²

Other operational conditions affecting workers exposure

- Outdoor / Indoor : Indoor use
Room size : 300 m³
Ventilation rate per hour : 1

Transfer of liquid products - falling liquids : > 1000 L/min, Used ART model.

Risk management measures

- Type of Application (Use) : Splash loading
- Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is implemented
Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m).
Handling that reduces contact between product and adjacent air.
- Technical conditions and measures : Advanced (industrial) exposure controls assumed.
Use in semi-closed process with opportunity for exposure
- Exposure routes : Dermal
- Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

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Effectiveness (of a measure) : Use suitable eye protection.
: >= 95 %

Note : Moderate hazard
Risk management measures are based on qualitative risk characterisation.

4.2.6 ES 4 - CS 6: Control of worker exposure: Industrial use (Roller application or brushing) (PROC10)

Product characteristics

Concentration of the Substance in Mixture/Article : >= 5 - <= 25 %
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : <= 10 %
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 8 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Both hands
Exposed skin surface assumed : 960 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Room size : 300 m³
Ventilation rate per hour : 1

Brush, roller, spreader : > 3 m²/h, Used ART model.

Risk management measures

Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures : Advanced (industrial) exposure controls assumed.

Exposure routes : Dermal
Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Use suitable eye protection.

Effectiveness (of a measure) : >= 95 %

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Note : Moderate hazard
Risk management measures are based on qualitative risk characterisation.

4.2.7 ES 4 - CS 7: Control of worker exposure: Industrial use (Treatment of articles by dipping and pouring) (PROC13)

Product characteristics

Concentration of the Substance in Mixture/Article : ≥ 5 - ≤ 25 %
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : ≤ 10 %
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 4 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of both hands
Exposed skin surface assumed : 480 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Room size : 300 m³
Ventilation rate per hour : 1

Handling of contaminated objects : > 3 m², Activities with open liquid surfaces or open reservoirs
- activity with agitated surfaces, Used ART model.

Risk management measures

Organisational measures to prevent /limit releases, dispersion and exposure : Advanced (industrial) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures : Advanced (industrial) exposure controls assumed.

Exposure routes : Inhalation
Technical conditions and measures : Local exhaust ventilation

Effectiveness (of a measure) : ≥ 50 %

Exposure routes : Dermal
Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

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Effectiveness (of a measure)	: Use suitable eye protection. : >= 90 %
Note	: Moderate hazard Risk management measures are based on qualitative risk characterisation.

4.3. ES 4 Exposure estimation and reference to its source

4.3.1 ES 4 - CS 1: Environmental release and exposure: Industrial use (Industrial use of processing aids in processes and products, not becoming part of articles) (ERC4)

Release route	Release rate	Release estimation method
Water	0,41 kg/d	EUSES v2.1
Air	0 kg/d	EUSES v2.1
Soil	0 kg/d	EUSES v2.1

Protection target	Exposure estimation (based on EUSES v2.1)	RCR
Freshwater	0,000616 mg/l	0,154
Freshwater sediment	0,745 mg/kg dry weight	0,154
Marine water	0,0000598 mg/l	0,15
Marine sediment	0,0723 mg/kg dry weight	0,15
Sewage treatment plant.	0,00205 mg/l	0,0108
Indirect exposure to humans via the environment	0,0000332 mg/kg bw/day	< 0,01
Soil	0,0991 mg/kg dry weight	0,163

4.3.2 ES 4 - CS 2: Worker exposure: Industrial use (Use in closed process, no likelihood of exposure) (PROC1)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,0046 mg/m ³ (Used ART model., Tier 2)	< 0,01
Worker - inhalative, long-term - local	0,0046 mg/m ³ (Used ART model., Tier 2)	< 0,01
Worker - inhalative, short-term - local	0,0092 mg/m ³ (Used ART model., Tier 2)	< 0,01
Worker - dermal, long-term - systemic	0,001 mg/kg bw/day (ECETOC TRA v3, Tier 1)	< 0,01
Worker - combined, long-term - systemic	The use is assessed to be safe.	< 0,01

4.3.3 ES 4 - CS 3: Worker exposure: Industrial use (Use in closed batch process

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(synthesis or formulation)) (PROC3)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,0052 mg/m ³ (Used ART model., Tier 2)	< 0,01
Worker - inhalative, long-term - local	0,0052 mg/m ³ (Used ART model., Tier 2)	< 0,01
Worker - inhalative, short-term - local	0,042 mg/m ³ (Used ART model., Tier 2)	0,042
Worker - dermal, long-term - systemic	0,017 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,013
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,016

4.3.4 ES 4 - CS 4: Worker exposure: Industrial use (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)) (PROC5)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,17 mg/m ³ (Used ART model., Tier 2)	0,077
Worker - inhalative, long-term - local	0,17 mg/m ³ (Used ART model., Tier 2)	0,17
Worker - inhalative, short-term - local	0,34 mg/m ³ (Used ART model., Tier 2)	0,34
Worker - dermal, long-term - systemic	0,411 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,329
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,406

4.3.5 ES 4 - CS 5: Worker exposure: Industrial use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) (PROC8b)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,052 mg/m ³ (Used ART model., Tier 2)	0,024
Worker - inhalative, long-term - local	0,052 mg/m ³ (Used ART model., Tier 2)	0,052
Worker - inhalative, short-term - local	0,41 mg/m ³ (Used ART model., Tier 2)	0,41
Worker - dermal, long-term - systemic	0,082 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,066

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Worker - combined, long-term - systemic	The use is assessed to be safe.	0,089
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4.3.6 ES 4 - CS 6: Worker exposure: Industrial use (Roller application or brushing) (PROC10)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,46 mg/m ³ (Used ART model., Tier 2)	0,209
Worker - inhalative, long-term - local	0,46 mg/m ³ (Used ART model., Tier 2)	0,46
Worker - inhalative, short-term - local	0,92 mg/m ³ (Used ART model., Tier 2)	0,92
Worker - dermal, long-term - systemic	0,823 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,658
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,867

4.3.7 ES 4 - CS 7: Worker exposure: Industrial use (Treatment of articles by dipping and pouring) (PROC13)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,34 mg/m ³ (Used ART model., Tier 2)	0,154
Worker - inhalative, long-term - local	0,34 mg/m ³ (Used ART model., Tier 2)	0,34
Worker - inhalative, short-term - local	0,68 mg/m ³ (Used ART model., Tier 2)	0,68
Worker - dermal, long-term - systemic	0,494 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,395
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,549

4.4. ES 4 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
see section 2 of this exposure scenario.

5. ES 5: Professional use; Washing and cleaning products (including solvent based products), Solid

5.1. Titles of Contributing scenarios (CS)

Environment		
CS1:	Professional use (Wide dispersive indoor use of processing aids in open systems)	ERC8a
Workers		
CS2:	Professional use (Use in closed batch process (synthesis or formulation))	PROC3
CS3:	Professional use (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact))	PROC5
CS4:	Professional use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities)	PROC8a
CS5:	Professional use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities)	PROC8b
CS6:	Professional use (Transfer of substance or preparation into small containers (dedicated filling line, including weighing))	PROC9
CS7:	Professional use (Roller application or brushing)	PROC10
CS8:	Professional use (Treatment of articles by dipping and pouring)	PROC13

5.2. ES 5 Conditions of use affecting exposure

5.2.1 ES 5 - CS 1: Control of environmental exposure: Professional use (Wide dispersive indoor use of processing aids in open systems) (ERC8a)

Amount used

Amounts used	: 2700 tonnes/year
Remarks	: Professional use, Consumer use
Amounts used	: 2200 tonnes/year
Remarks	: Professional use
Daily amount for wide disperse uses	: 0,37 kg/day
Fraction of EU tonnage used in region	: 10 %

Frequency and duration of use

Continuous exposure	: 300 days per year
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Environment factors not influenced by risk management

Flow rate of receiving surface water	: 18.000 m ³ /d
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Conditions and measures related to sewage treatment plant:

Type of Sewage Treatment Plant : Municipal STP
Flow rate of sewage treatment : 2.000 m3/d
plant effluent
STP effectiveness : 99 %

Waste management measures

Disposal methods : Dispose of waste or used sacks/containers according to local regulations.

5.2.2 ES 5 - CS 2: Control of worker exposure: Professional use (Use in closed batch process (synthesis or formulation)) (PROC3)

Remarks : Sampling

Product characteristics

Concentration of the Substance in Mixture/Article : $\geq 1 - \leq 5$ %

Physical Form (at time of use) : Solid, low dustiness

Remarks : Covers use at ambient temperatures., Covers solid products only.

Frequency and duration of use

Exposure duration : < 8 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of one hand
Exposed skin surface assumed : 240 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk management measures

Organisational measures to prevent /limit releases, dispersion and exposure : Basic (professional) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures : Basic (professional) exposure controls assumed. Use in closed batch process (synthesis or formulation) Provide a basic standard of general ventilation (1 to 3 air changes per hour) .

Note : Low hazard
Risk management measures are based on qualitative risk characterisation.

5.2.3 ES 5 - CS 3: Control of worker exposure: Professional use (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or

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significant contact)) (PROC5)

Product characteristics

Concentration of the Substance in Mixture/Article : $\geq 1 - \leq 5$ %

Physical Form (at time of use) : Solid, low dustiness
Remarks : Covers use at ambient temperatures., Covers solid products only.

Frequency and duration of use

Exposure duration : < 8 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of both hands
Exposed skin surface assumed : 480 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk management measures

Organisational measures to prevent /limit releases, dispersion and exposure : Basic (professional) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures : Basic (professional) exposure controls assumed. Provide a basic standard of general ventilation (1 to 3 air changes per hour) .

Exposure routes : Dermal
Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Effectiveness (of a measure) : ≥ 90 %

Note : Low hazard
Risk management measures are based on qualitative risk characterisation.

5.2.4 ES 5 - CS 4: Control of worker exposure: Professional use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities) (PROC8a)

Product characteristics

Concentration of the Substance in Mixture/Article : $\geq 1 - \leq 5$ %

Physical Form (at time of use) : Solid, low dustiness
Remarks : Covers use at ambient temperatures., Covers solid products only.

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Frequency and duration of use

Exposure duration : < 1 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Both hands
Exposed skin surface assumed : 960 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk management measures

Organisational measures to prevent /limit releases, dispersion and exposure : Basic (professional) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures : Basic (professional) exposure controls assumed. Provide a basic standard of general ventilation (1 to 3 air changes per hour) .

Exposure routes : Dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Effectiveness (of a measure) : >= 80 %

Note : Low hazard
Risk management measures are based on qualitative risk characterisation.

5.2.5 ES 5 - CS 5: Control of worker exposure: Professional use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) (PROC8b)

Product characteristics

Concentration of the Substance in Mixture/Article : >= 1 - <= 5 %

Physical Form (at time of use) : Solid, low dustiness
Remarks : Covers use at ambient temperatures., Covers solid products only.

Frequency and duration of use

Exposure duration : < 1 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Both hands
Exposed skin surface assumed : 960 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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Risk management measures

- Organisational measures to prevent /limit releases, dispersion and exposure : Basic (professional) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented
- Technical conditions and measures : Basic (professional) exposure controls assumed. Provide a basic standard of general ventilation (1 to 3 air changes per hour) . Use in semi-closed process with opportunity for exposure
- Exposure routes : Dermal
- Personal protective measures : Wear suitable gloves tested to EN374.
- Effectiveness (of a measure) : $\geq 80\%$
- Note : Low hazard
Risk management measures are based on qualitative risk characterisation.

5.2.6 ES 5 - CS 6: Control of worker exposure: Professional use (Transfer of substance or preparation into small containers (dedicated filling line, including weighing)) (PROC9)

Product characteristics

- Concentration of the Substance in Mixture/Article : $\geq 1 - \leq 5\%$
- Physical Form (at time of use) : Solid, low dustiness
- Remarks : Covers use at ambient temperatures., Covers solid products only.

Frequency and duration of use

- Exposure duration : < 1 h
- Frequency of use : per day

Human factors not influenced by risk management

- Dermal exposure : Palm of both hands
- Exposed skin surface assumed : 480 cm^2

Other operational conditions affecting workers exposure

- Outdoor / Indoor : Indoor use

Risk management measures

- Organisational measures to prevent /limit releases, dispersion and exposure : Basic (professional) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented
- Technical conditions and measures : Basic (professional) exposure controls assumed. Provide a basic standard of general ventilation (1 to 3 air changes per hour) . Use in semi-closed process with opportunity for exposure
- Exposure routes : Dermal

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Personal protective measures : Wear suitable gloves tested to EN374.
Effectiveness (of a measure) : $\geq 80\%$

Note : Low hazard
Risk management measures are based on qualitative risk characterisation.

5.2.7 ES 5 - CS 7: Control of worker exposure: Professional use (Roller application or brushing) (PROC10)

Product characteristics

Concentration of the Substance in Mixture/Article : $\geq 1 - \leq 5\%$
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : $\leq 5\%$
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 8 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Both hands
Exposed skin surface assumed : 960 cm^2

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Room size : 300 m^3
Ventilation rate per hour : 1

Brush, roller, spreader : $> 3\text{ m}^2/\text{h}$, Used ART model.

Risk management measures

Organisational measures to prevent /limit releases, dispersion and exposure : Basic (professional) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures : Basic (professional) exposure controls assumed.

Exposure routes : Dermal
Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Effectiveness (of a measure) : $\geq 90\%$

Note : Low hazard

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Risk management measures are based on qualitative risk characterisation.

5.2.8 ES 5 - CS 8: Control of worker exposure: Professional use (Treatment of articles by dipping and pouring) (PROC13)

Product characteristics

- Concentration of the Substance in Mixture/Article : $\geq 1 - \leq 5$ %
ECETOC TRA v3
- Concentration of the Substance in Mixture/Article : ≤ 5 %
Used ART model.
- Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

- Exposure duration : < 1 h
Frequency of use : per day

Human factors not influenced by risk management

- Dermal exposure : Palm of both hands
Exposed skin surface assumed : 480 cm²

Other operational conditions affecting workers exposure

- Outdoor / Indoor : Indoor use
Room size : 300 m³
Ventilation rate per hour : 1

- Handling of contaminated objects : > 3 m², Activities with open liquid surfaces or open reservoirs
- activity with agitated surfaces, Used ART model.

Risk management measures

- Organisational measures to prevent /limit releases, dispersion and exposure : Basic (professional) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is implemented
- Technical conditions and measures : Basic (professional) exposure controls assumed.
- Exposure routes : Dermal
- Personal protective measures : Wear suitable gloves tested to EN374.
- Effectiveness (of a measure) : ≥ 80 %

- Note : Low hazard
Risk management measures are based on qualitative risk characterisation.

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5.3. ES 5 Exposure estimation and reference to its source

5.3.1 ES 5 - CS 1: Environmental release and exposure: Professional use (Wide dispersive indoor use of processing aids in open systems) (ERC8a)

Release route	Release rate	Release estimation method
Water	0,37 kg/d	EUSES v2.1
Air	0 kg/d	EUSES v2.1
Soil	0 kg/d	EUSES v2.1

Protection target	Exposure estimation (based on EUSES v2.1)	RCR
Freshwater	0,000596 mg/l	0,149
Freshwater sediment	0,721 mg/kg dry weight	0,149
Marine water	0,0000578 mg/l	0,145
Marine sediment	0,0699 mg/kg dry weight	0,145
Sewage treatment plant.	0,00185 mg/l	< 0,01
Indirect exposure to humans via the environment	0,0000365 mg/kg bw/day	< 0,01
Soil	0,0894 mg/kg dry weight	0,147

5.3.2 ES 5 - CS 2: Worker exposure: Professional use (Use in closed batch process (synthesis or formulation)) (PROC3)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,02 mg/m ³ (ECETOC TRA v3, Tier 1)	< 0,01
Worker - inhalative, long-term - local	0,02 mg/m ³ (ECETOC TRA v3, Tier 1)	0,02
Worker - inhalative, short-term - local	0,08 mg/m ³ (ECETOC TRA v3, Tier 1)	0,08
Worker - dermal, long-term - systemic	0,138 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,11
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,12

5.3.3 ES 5 - CS 3: Worker exposure: Professional use (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)) (PROC5)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,2 mg/m ³ (ECETOC TRA v3, Tier 1)	0,091

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Worker - inhalative, long-term - local	0,2 mg/m ³ (ECETOC TRA v3, Tier 1)	0,2
Worker - inhalative, short-term - local	0,8 mg/m ³ (ECETOC TRA v3, Tier 1)	0,8
Worker - dermal, long-term - systemic	0,274 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,219
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,31

5.3.4 ES 5 - CS 4: Worker exposure: Professional use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,02 mg/m ³ (ECETOC TRA v3, Tier 1)	< 0,01
Worker - inhalative, long-term - local	0,02 mg/m ³ (ECETOC TRA v3, Tier 1)	0,02
Worker - inhalative, short-term - local	0,4 mg/m ³ (ECETOC TRA v3, Tier 1)	0,4
Worker - dermal, long-term - systemic	0,11 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,088
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,097

5.3.5 ES 5 - CS 5: Worker exposure: Professional use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) (PROC8b)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,02 mg/m ³ (ECETOC TRA v3, Tier 1)	< 0,01
Worker - inhalative, long-term - local	0,02 mg/m ³ (ECETOC TRA v3, Tier 1)	0,02
Worker - inhalative, short-term - local	0,4 mg/m ³ (ECETOC TRA v3, Tier 1)	0,4
Worker - dermal, long-term - systemic	0,11 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,088
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,097

5.3.6 ES 5 - CS 6: Worker exposure: Professional use (Transfer of substance or preparation into small containers (dedicated filling line, including weighing)) (PROC9)

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Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,02 mg/m ³ (ECETOC TRA v3, Tier 1)	< 0,01
Worker - inhalative, long-term - local	0,02 mg/m ³ (ECETOC TRA v3, Tier 1)	0,02
Worker - inhalative, short-term - local	0,4 mg/m ³ (ECETOC TRA v3, Tier 1)	0,4
Worker - dermal, long-term - systemic	0,055 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,044
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,053

5.3.7 ES 5 - CS 7: Worker exposure: Professional use (Roller application or brushing) (PROC10)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,23 mg/m ³ (Used ART model., Tier 2)	0,105
Worker - inhalative, long-term - local	0,23 mg/m ³ (Used ART model., Tier 2)	0,23
Worker - inhalative, short-term - local	0,46 mg/m ³ (Used ART model., Tier 2)	0,46
Worker - dermal, long-term - systemic	0,549 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,439
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,543

5.3.8 ES 5 - CS 8: Worker exposure: Professional use (Treatment of articles by dipping and pouring) (PROC13)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,086 mg/m ³ (Used ART model., Tier 2)	0,039
Worker - inhalative, long-term - local	0,086 mg/m ³ (Used ART model., Tier 2)	0,086
Worker - inhalative, short-term - local	0,68 mg/m ³ (Used ART model., Tier 2)	0,68
Worker - dermal, long-term - systemic	0,11 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,088
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,127

5.4. ES 5 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
see section 2 of this exposure scenario.

6. ES 6: Professional use; Washing and cleaning products (including solvent based products), Liquid

6.1. Titles of Contributing scenarios (CS)

Environment		
CS1:	Professional use (Wide dispersive indoor use of processing aids in open systems)	ERC8a
Workers		
CS2:	Professional use (Use in closed process, no likelihood of exposure)	PROC1
CS3:	Professional use (Use in closed batch process (synthesis or formulation))	PROC3
CS4:	Professional use (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact))	PROC5
CS5:	Professional use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities)	PROC8a
CS6:	Professional use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities)	PROC8b
CS7:	Professional use (Transfer of substance or preparation into small containers (dedicated filling line, including weighing))	PROC9
CS8:	Professional use (Roller application or brushing)	PROC10
CS9:	Professional use (Treatment of articles by dipping and pouring)	PROC13

6.2. ES 6 Conditions of use affecting exposure

6.2.1 ES 6 - CS 1: Control of environmental exposure: Professional use (Wide dispersive indoor use of processing aids in open systems) (ERC8a)

Amount used

Amounts used	:	2700 tonnes/year
Remarks	:	Professional use, Consumer use
Amounts used	:	2200 tonnes/year

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Remarks : Professional use
Daily amount for wide disperse uses : 0,37 kg/day
Fraction of EU tonnage used in region : 10 %

Frequency and duration of use

Continuous exposure : 300 days per year

Environment factors not influenced by risk management

Flow rate of receiving surface water : 18.000 m3/d

Conditions and measures related to sewage treatment plant:

Type of Sewage Treatment Plant : Municipal STP
Flow rate of sewage treatment plant effluent : 2.000 m3/d
STP effectiveness : 99 %

Waste management measures

Disposal methods : Dispose of waste or used sacks/containers according to local regulations.

6.2.2 ES 6 - CS 2: Control of worker exposure: Professional use (Use in closed process, no likelihood of exposure) (PROC1)

Remarks : Spraying
Closed systems

Product characteristics

Concentration of the Substance in Mixture/Article : $\geq 1 - \leq 5$ %
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : ≤ 5 %
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 1 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of one hand
Exposed skin surface assumed : 240 cm²

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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Room size : 300 m3
Ventilation rate per hour : 1

Handling of contaminated objects : > 3 m2

Contamination : > 90 %, Used ART model.

Risk management measures

Organisational measures to prevent /limit releases, dispersion and exposure : Basic (professional) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures : Basic (professional) exposure controls assumed. Use in closed process, no likelihood of exposure

Exposure routes : Dermal
Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Effectiveness (of a measure) : >= 90 %

Note : Low hazard
Risk management measures are based on qualitative risk characterisation.

6.2.3 ES 6 - CS 3: Control of worker exposure: Professional use (Use in closed batch process (synthesis or formulation)) (PROC3)

Remarks : Sampling

Product characteristics

Concentration of the Substance in Mixture/Article : >= 1 - <= 5 %
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : <= 5 %
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 1 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of one hand
Exposed skin surface assumed : 240 cm²

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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Room size : 300 m³
Ventilation rate per hour : 1

Transfer of liquid products - falling liquids : 1 - 10 L/min, Used ART model.

Risk management measures

Type of Application (Use) : Splash loading
Open systems

Organisational measures to prevent /limit releases, dispersion and exposure : Basic (professional) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures : Basic (professional) exposure controls assumed.
Use in closed batch process (synthesis or formulation)

Note : Low hazard
Risk management measures are based on qualitative risk characterisation.

6.2.4 ES 6 - CS 4: Control of worker exposure: Professional use (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)) (PROC5)

Product characteristics

Concentration of the Substance in Mixture/Article : $\geq 1 - \leq 5$ %
ECETOC TRA v3

Concentration of the Substance in Mixture/Article : ≤ 5 %
Used ART model.

Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures

Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

Exposure duration : < 8 h
Frequency of use : per day

Human factors not influenced by risk management

Dermal exposure : Palm of both hands
Exposed skin surface assumed : 480 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Room size : 300 m³
Ventilation rate per hour : 1

Handling of contaminated objects : 1 - 3 m², Activities with open liquid surfaces or open

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reservoirs - activity with agitated surfaces, Used ART model.

Risk management measures

- Organisational measures to prevent /limit releases, dispersion and exposure : Basic (professional) exposure controls assumed.
Assumes a good basic standard of occupational hygiene is implemented
Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m).
- Technical conditions and measures : Basic (professional) exposure controls assumed.
- Exposure routes : Dermal
- Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
- Effectiveness (of a measure) : $\geq 90\%$
- Note : Low hazard
Risk management measures are based on qualitative risk characterisation.

6.2.5 ES 6 - CS 5: Control of worker exposure: Professional use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities) (PROC8a)

Product characteristics

- Concentration of the Substance in Mixture/Article : $\geq 1 - \leq 5\%$
ECETOC TRA v3
- Concentration of the Substance in Mixture/Article : $\leq 5\%$
Used ART model.
- Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
- Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

- Exposure duration : < 1 h
Frequency of use : per day

Human factors not influenced by risk management

- Dermal exposure : Both hands
Exposed skin surface assumed : 960 cm²

Other operational conditions affecting workers exposure

- Outdoor / Indoor : Indoor use
Room size : 300 m³
Ventilation rate per hour : 1

Transfer of liquid products - falling : > 1000 L/min, Used ART model.

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liquids

Risk management measures

Type of Application (Use)	: Splash loading Open systems
Organisational measures to prevent /limit releases, dispersion and exposure	: Basic (professional) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures	: Basic (professional) exposure controls assumed.
Exposure routes	: Dermal
Personal protective measures	: Wear suitable gloves tested to EN374.
Effectiveness (of a measure)	: >= 80 %
Note	: Low hazard Risk management measures are based on qualitative risk characterisation.

6.2.6 ES 6 - CS 6: Control of worker exposure: Professional use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) (PROC8b)

Product characteristics

Concentration of the Substance in Mixture/Article	: >= 1 - <= 5 % ECETOC TRA v3
Concentration of the Substance in Mixture/Article	: <= 5 % Used ART model.
Physical Form (at time of use)	: Liquid, Low viscosity
Remarks	: Substances in preparations / mixtures
Physical Form (at time of use)	: Solid, Powder products
Remarks	: Covers solid products only.

Frequency and duration of use

Exposure duration	: < 1 h
Frequency of use	: per day

Human factors not influenced by risk management

Dermal exposure	: Both hands
Exposed skin surface assumed	: 960 cm ²

Other operational conditions affecting workers exposure

Outdoor / Indoor	: Indoor use
Room size	: 300 m ³
Ventilation rate per hour	: 1
Transfer of liquid products - falling liquids	: > 1000 L/min, Used ART model.

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Risk management measures

Type of Application (Use)	: Splash loading
Organisational measures to prevent /limit releases, dispersion and exposure	: Basic (professional) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented Handling that reduces contact between product and adjacent air.
Technical conditions and measures	: Basic (professional) exposure controls assumed. Use in semi-closed process with opportunity for exposure
Exposure routes	: Dermal
Personal protective measures	: Wear suitable gloves tested to EN374.
Effectiveness (of a measure)	: $\geq 80\%$
Note	: Low hazard Risk management measures are based on qualitative risk characterisation.

6.2.7 ES 6 - CS 7: Control of worker exposure: Professional use (Transfer of substance or preparation into small containers (dedicated filling line, including weighing)) (PROC9)

Product characteristics

Concentration of the Substance in Mixture/Article	: $\geq 1 - \leq 5\%$ ECETOC TRA v3
Concentration of the Substance in Mixture/Article	: $\leq 5\%$ Used ART model.
Physical Form (at time of use)	: Liquid, Low viscosity
Remarks	: Substances in preparations / mixtures
Physical Form (at time of use)	: Solid, Powder products
Remarks	: Covers solid products only.

Frequency and duration of use

Exposure duration	: < 1 h
Frequency of use	: per day

Human factors not influenced by risk management

Dermal exposure	: Palm of both hands
Exposed skin surface assumed	: 480 cm ²

Other operational conditions affecting workers exposure

Outdoor / Indoor	: Indoor use
Room size	: 300 m ³
Ventilation rate per hour	: 1
Transfer of liquid products - falling liquids	: 100 - 1000 L/min, Used ART model.

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Risk management measures

Type of Application (Use)	: Splash loading
Organisational measures to prevent /limit releases, dispersion and exposure	: Basic (professional) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented Handling that reduces contact between product and adjacent air.
Technical conditions and measures	: Basic (professional) exposure controls assumed. Use in semi-closed process with opportunity for exposure
Exposure routes	: Dermal
Personal protective measures	: Wear suitable gloves tested to EN374.
Effectiveness (of a measure)	: >= 80 %
Note	: Low hazard Risk management measures are based on qualitative risk characterisation.

6.2.8 ES 6 - CS 8: Control of worker exposure: Professional use (Roller application or brushing) (PROC10)

Product characteristics

Concentration of the Substance in Mixture/Article	: >= 1 - <= 5 % ECETOC TRA v3
Concentration of the Substance in Mixture/Article	: <= 5 % Used ART model.
Physical Form (at time of use)	: Liquid, Low viscosity
Remarks	: Substances in preparations / mixtures
Physical Form (at time of use)	: Solid, Powder products
Remarks	: Covers solid products only.

Frequency and duration of use

Exposure duration	: < 8 h
Frequency of use	: per day

Human factors not influenced by risk management

Dermal exposure	: Both hands
Exposed skin surface assumed	: 960 cm ²

Other operational conditions affecting workers exposure

Outdoor / Indoor	: Indoor use
Room size	: 300 m ³
Ventilation rate per hour	: 1
Brush, roller, spreader	: > 3 m ² /h, Used ART model.

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Risk management measures

- Organisational measures to prevent /limit releases, dispersion and exposure : Basic (professional) exposure controls assumed. Assumes a good basic standard of occupational hygiene is implemented
- Technical conditions and measures : Basic (professional) exposure controls assumed.
- Exposure routes : Dermal
- Personal protective measures : Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
- Effectiveness (of a measure) : $\geq 90\%$
- Note : Low hazard
Risk management measures are based on qualitative risk characterisation.

6.2.9 ES 6 - CS 9: Control of worker exposure: Professional use (Treatment of articles by dipping and pouring) (PROC13)

Product characteristics

- Concentration of the Substance in Mixture/Article : $\geq 1 - \leq 5\%$
ECETOC TRA v3
- Concentration of the Substance in Mixture/Article : $\leq 5\%$
Used ART model.
- Physical Form (at time of use) : Liquid, Low viscosity
Remarks : Substances in preparations / mixtures
- Physical Form (at time of use) : Solid, Powder products
Remarks : Covers solid products only.

Frequency and duration of use

- Exposure duration : < 1 h
- Frequency of use : per day

Human factors not influenced by risk management

- Dermal exposure : Palm of both hands
- Exposed skin surface assumed : 480 cm²

Other operational conditions affecting workers exposure

- Outdoor / Indoor : Indoor use
- Room size : 300 m³
- Ventilation rate per hour : 1
- Handling of contaminated objects : > 3 m², Activities with open liquid surfaces or open reservoirs - activity with agitated surfaces, Used ART model.

Risk management measures

- Organisational measures to prevent /limit releases, dispersion : Basic (professional) exposure controls assumed. Assumes a good basic standard of occupational hygiene is

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and exposure Technical conditions and measures	implemented : Basic (professional) exposure controls assumed.
Exposure routes	: Dermal
Personal protective measures	: Wear suitable gloves tested to EN374.
Effectiveness (of a measure)	: >= 80 %
Note	: Low hazard Risk management measures are based on qualitative risk characterisation.

6.3. ES 6 Exposure estimation and reference to its source

6.3.1 ES 6 - CS 1: Environmental release and exposure: Professional use (Wide dispersive indoor use of processing aids in open systems) (ERC8a)

Release route	Release rate	Release estimation method
Water	0,37 kg/d	EUSES v2.1
Air	0 kg/d	EUSES v2.1
Soil	0 kg/d	EUSES v2.1

Protection target	Exposure estimation (based on EUSES v2.1)	RCR
Freshwater	0,000596 mg/l	0,149
Freshwater sediment	0,721 mg/kg dry weight	0,149
Marine water	0,0000578 mg/l	0,145
Marine sediment	0,0699 mg/kg dry weight	0,145
Sewage treatment plant.	0,00185 mg/l	< 0,01
Indirect exposure to humans via the environment	0,0000365 mg/kg bw/day	< 0,01
Soil	0,0894 mg/kg dry weight	0,147

6.3.2 ES 6 - CS 2: Worker exposure: Professional use (Use in closed process, no likelihood of exposure) (PROC1)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,00029 mg/m ³ (Used ART model., Tier 2)	< 0,01
Worker - inhalative, long-term - local	0,00029 mg/m ³ (Used ART model., Tier 2)	< 0,01
Worker - inhalative, short-term - local	0,0023 mg/m ³ (Used ART model., Tier 2)	< 0,01
Worker - dermal, long-term - systemic	0,000136 mg/kg bw/day (ECETOC TRA v3, Tier 1)	< 0,01

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Worker - combined, long-term - systemic	The use is assessed to be safe.	< 0,01
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6.3.3 ES 6 - CS 3: Worker exposure: Professional use (Use in closed batch process (synthesis or formulation)) (PROC3)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,0026 mg/m ³ (Used ART model., Tier 2)	< 0,01
Worker - inhalative, long-term - local	0,0026 mg/m ³ (Used ART model., Tier 2)	< 0,01
Worker - inhalative, short-term - local	0,021 mg/m ³ (Used ART model., Tier 2)	0,021
Worker - dermal, long-term - systemic	0,028 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,022
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,023

6.3.4 ES 6 - CS 4: Worker exposure: Professional use (Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)) (PROC5)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,25 mg/m ³ (Used ART model., Tier 2)	0,114
Worker - inhalative, long-term - local	0,25 mg/m ³ (Used ART model., Tier 2)	0,25
Worker - inhalative, short-term - local	0,5 mg/m ³ (Used ART model., Tier 2)	0,5
Worker - dermal, long-term - systemic	0,274 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,219
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,333

6.3.5 ES 6 - CS 5: Worker exposure: Professional use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,086 mg/m ³ (Used ART model., Tier 2)	0,039

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Worker - inhalative, long-term - local	0,086 mg/m ³ (Used ART model., Tier 2)	0,086
Worker - inhalative, short-term - local	0,68 mg/m ³ (Used ART model., Tier 2)	0,68
Worker - dermal, long-term - systemic	0,11 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,088
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,127

6.3.6 ES 6 - CS 6: Worker exposure: Professional use (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) (PROC8b)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,026 mg/m ³ (Used ART model., Tier 2)	0,012
Worker - inhalative, long-term - local	0,026 mg/m ³ (Used ART model., Tier 2)	0,026
Worker - inhalative, short-term - local	0,21 mg/m ³ (Used ART model., Tier 2)	0,21
Worker - dermal, long-term - systemic	0,11 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,088
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,1

6.3.7 ES 6 - CS 7: Worker exposure: Professional use (Transfer of substance or preparation into small containers (dedicated filling line, including weighing)) (PROC9)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,0078 mg/m ³ (Used ART model., Tier 2)	< 0,01
Worker - inhalative, long-term - local	0,0078 mg/m ³ (Used ART model., Tier 2)	< 0,01
Worker - inhalative, short-term - local	0,062 mg/m ³ (Used ART model., Tier 2)	0,062
Worker - dermal, long-term - systemic	0,055 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,044
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,047

6.3.8 ES 6 - CS 8: Worker exposure: Professional use (Roller application or brushing) (PROC10)

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Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,23 mg/m ³ (Used ART model., Tier 2)	0,105
Worker - inhalative, long-term - local	0,23 mg/m ³ (Used ART model., Tier 2)	0,23
Worker - inhalative, short-term - local	0,46 mg/m ³ (Used ART model., Tier 2)	0,46
Worker - dermal, long-term - systemic	0,549 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,439
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,543

6.3.9 ES 6 - CS 9: Worker exposure: Professional use (Treatment of articles by dipping and pouring) (PROC13)

Route of exposure and type of effects	Exposure estimate	RCR
Worker - inhalative, long-term - systemic	0,086 mg/m ³ (Used ART model., Tier 2)	0,039
Worker - inhalative, long-term - local	0,086 mg/m ³ (Used ART model., Tier 2)	0,086
Worker - inhalative, short-term - local	0,68 mg/m ³ (Used ART model., Tier 2)	0,68
Worker - dermal, long-term - systemic	0,11 mg/kg bw/day (ECETOC TRA v3, Tier 1)	0,088
Worker - combined, long-term - systemic	The use is assessed to be safe.	0,127

6.4. ES 6 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
see section 2 of this exposure scenario.

7. ES 7: Consumer use; Washing and cleaning products (including solvent based products), Liquid

7.1. Titles of Contributing scenarios (CS)

Washing and cleaning products (including solvent based products) (PC35)

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Environment		
CS1:	Consumer use (Wide dispersive indoor use of processing aids in open systems)	ERC8a
Consumer		
CS2:	Consumer use (Washing and cleaning products (including solvent based products))	PC35
CS3:	Consumer use (Washing and cleaning products (including solvent based products))	PC35
CS4:	Consumer use (Washing and cleaning products (including solvent based products))	PC35
CS5:	Consumer use (Washing and cleaning products (including solvent based products))	PC35
CS6:	Consumer use (Washing and cleaning products (including solvent based products))	PC35

7.2. ES 7 Conditions of use affecting exposure

7.2.1 ES 7 - CS 1: Control of environmental exposure: Consumer use (Wide dispersive indoor use of processing aids in open systems) (ERC8a)

Amount used

Amounts used : 2700 tonnes/year
Remarks : Professional use, Consumer use
Amounts used : 500 tonnes/year
Remarks : Consumer use
Daily amount for wide disperse uses : 0,069 kg/day
Fraction of EU tonnage used in region : 10 %

Frequency and duration of use

Continuous exposure : 365 days per year

Environment factors not influenced by risk management

Flow rate of receiving surface water : 18.000 m³/d

Conditions and measures related to sewage treatment plant:

Type of Sewage Treatment Plant : Municipal STP
Flow rate of sewage treatment plant effluent : 2.000 m³/d
STP effectiveness : 99 %

Waste management measures

Disposal methods : Dispose of waste or used sacks/containers according to local

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regulations.

7.2.2 ES 7 - CS 2: Control of consumer exposure: Consumer use (Washing and cleaning products (including solvent based products)) (PC35)

Remarks : Subcategory: Laundry and dish washing products
Manual

Product characteristics

Concentration of the Substance in Mixture/Article : <= 2 %
Concentration of substance in product

Concentration of the Substance in Mixture/Article : <= 0,02 %
Concentration after dilution for use maximum, AISE Reach Exposure Assessment Consumer Tool (REACT)

Physical Form (at time of use) : Liquid

Human factors not influenced by risk management

Exposed skin surface assumed : 2082 cm²

Other given operational conditions affecting consumers exposure

Fraction of substance amount available for exposure : 1
Covers frequency up to: : 1,4 uses per day
Remarks : AISE Reach Exposure Assessment Consumer Tool (REACT)

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Ensure that splashes and spills are avoided by product design.

Consumer Measures : Ensure that direct skin contact is avoided.
Remarks : (undiluted)

7.2.3 ES 7 - CS 3: Control of consumer exposure: Consumer use (Washing and cleaning products (including solvent based products)) (PC35)

Remarks : Subcategory: Laundry and dish washing products
Textile pretreatment

Product characteristics

Concentration of the Substance in Mixture/Article : <= 2 %

Physical Form (at time of use) : Liquid

Human factors not influenced by risk management

Exposed skin surface assumed : 857,5 cm²

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Other given operational conditions affecting consumers exposure

Fraction of substance amount available for exposure : 1
Covers frequency up to: : 0,5 uses per day
Remarks : AISE Reach Exposure Assessment Consumer Tool (REACT)

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Ensure that splashes and spills are avoided by product design.
Consumer Measures : Ensure that direct skin contact is avoided.
Remarks : (undiluted)

7.2.4 ES 7 - CS 4: Control of consumer exposure: Consumer use (Washing and cleaning products (including solvent based products)) (PC35)

Remarks : Subcategory: Laundry and dish washing products
Clothing (all kind of materials), towel

Product characteristics

Concentration of the Substance in Mixture/Article : <= 2 %
Physical Form (at time of use) : Liquid

Amount used

Amounts used : 230 g
Remarks : (undiluted)

Human factors not influenced by risk management

Exposed skin surface assumed : 14320 cm²

Other given operational conditions affecting consumers exposure

Fraction of substance amount available for exposure : 0,01

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Ensure that splashes and spills are avoided by product design.
Consumer Measures : Ensure that direct skin contact is avoided.
Remarks : (undiluted)

7.2.5 ES 7 - CS 5: Control of consumer exposure: Consumer use (Washing and cleaning products (including solvent based products)) (PC35)

Remarks : Hand dishwashing (liquid regular, liquid concentrate) for consumer use

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Product characteristics

Concentration of the Substance in Mixture/Article : <= 2 %

Physical Form (at time of use) : Liquid

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Ensure that splashes and spills are avoided by product design.

Consumer Measures : Ensure that direct skin contact is avoided.

Remarks : (undiluted)

7.2.6 ES 7 - CS 6: Control of consumer exposure: Consumer use (Washing and cleaning products (including solvent based products)) (PC35)

Remarks : Machine dishwashing (powder, liquid, tablet) for consumer use

Product characteristics

Concentration of the Substance in Mixture/Article : <= 2 %

Physical Form (at time of use) : Liquid

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Ensure that splashes and spills are avoided by product design.

Consumer Measures : Ensure that direct skin contact is avoided.

Remarks : (undiluted)

7.3. ES 7 Exposure estimation and reference to its source

7.3.1 ES 7 - CS 1: Environmental release and exposure: Consumer use (Wide dispersive indoor use of processing aids in open systems) (ERC8a)

Release route	Release rate	Release estimation method
Water	0,37 kg/d	EUSES v2.1
Air	0 kg/d	EUSES v2.1
Soil	0 kg/d	EUSES v2.1

Protection target	Exposure estimation (based on EUSES v2.1)	RCR
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Freshwater	0,000596 mg/l	0,149
Freshwater sediment	0,721 mg/kg dry weight	0,149
Marine water	0,0000578 mg/l	0,145
Marine sediment	0,0699 mg/kg dry weight	0,145
Sewage treatment plant.	0,00185 mg/l	< 0,01
Indirect exposure to humans via the environment	0,0000365 mg/kg bw/day	< 0,01
Soil	0,0894 mg/kg dry weight	0,147

7.3.2 ES 7 - CS 2: Consumer exposure: Consumer use (Washing and cleaning products (including solvent based products)) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
Consumer - dermal, long-term - systemic	0,004 mg/kg bw/day (AISE Reach Exposure Assessment Consumer Tool (REACT))	< 0,01
Consumer - combined, long-term - systemic		< 0,01

7.3.3 ES 7 - CS 3: Consumer exposure: Consumer use (Washing and cleaning products (including solvent based products)) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
Consumer - dermal, long-term - systemic	0,057 mg/kg bw/day (AISE Reach Exposure Assessment Consumer Tool (REACT))	0,064
Consumer - combined, long-term - systemic		0,064

7.3.4 ES 7 - CS 4: Consumer exposure: Consumer use (Washing and cleaning products (including solvent based products)) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
Consumer - dermal, long-term - systemic	0,0000188 mg/kg bw/day (AISE Reach Exposure Assessment Consumer Tool (REACT))	< 0,01
Consumer - combined, long-term - systemic		< 0,01

7.3.5 ES 7 - CS 5: Consumer exposure: Consumer use (Washing and cleaning products (including solvent based products)) (PC35)

Route of exposure and type	Exposure estimate	RCR
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of effects		
Consumer - dermal, long-term - systemic	0,000833 mg/kg bw/day (AISE Reach Exposure Assessment Consumer Tool (REACT))	< 0,01
Consumer - oral, long-term - systemic	0,000495 mg/kg bw/day (AISE Reach Exposure Assessment Consumer Tool (REACT))	< 0,01
Consumer - combined, long-term - systemic		< 0,01

7.3.6 ES 7 - CS 6: Consumer exposure: Consumer use (Washing and cleaning products (including solvent based products)) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
Consumer - oral, long-term - systemic	0,000495 mg/kg bw/day (AISE Reach Exposure Assessment Consumer Tool (REACT))	< 0,01
Consumer - combined, long-term - systemic		< 0,01

7.4. ES 7 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
see section 2 of this exposure scenario.

8. ES 8: Consumer use; Washing and cleaning products (including solvent based products), Solid

8.1. Titles of Contributing scenarios (CS)

Washing and cleaning products (including solvent based products) (PC35)	
Environment	
CS1: Consumer use (Wide dispersive indoor use of processing aids in open systems)	ERC8a
Consumer	
CS2: Consumer use (Washing and cleaning products (including solvent based products))	PC35
CS3: Consumer use (Washing and cleaning products (including solvent based products))	PC35
CS4: Consumer use (Washing and cleaning products (including solvent based products))	PC35

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8.2. ES 8 Conditions of use affecting exposure

8.2.1 ES 8 - CS 1: Control of environmental exposure: Consumer use (Wide dispersive indoor use of processing aids in open systems) (ERC8a)

Amount used

Amounts used : 2700 tonnes/year
Remarks : Professional use, Consumer use
Amounts used : 500 tonnes/year
Remarks : Consumer use
Daily amount for wide disperse uses : 0,069 kg/day
Fraction of EU tonnage used in region : 10 %

Frequency and duration of use

Continuous exposure : 365 days per year

Environment factors not influenced by risk management

Flow rate of receiving surface water : 18.000 m³/d

Conditions and measures related to sewage treatment plant:

Type of Sewage Treatment Plant : Municipal STP
Flow rate of sewage treatment plant effluent : 2.000 m³/d
STP effectiveness : 99 %

Waste management measures

Disposal methods : Dispose of waste or used sacks/containers according to local regulations.

8.2.2 ES 8 - CS 2: Control of consumer exposure: Consumer use (Washing and cleaning products (including solvent based products)) (PC35)

Remarks : Subcategory: Laundry and dish washing products
Manual

Product characteristics

Concentration of the Substance in Mixture/Article : <= 2 %
Concentration of substance in product

Concentration of the Substance in Mixture/Article : <= 0,02 %
Concentration after dilution for use maximum, AISE Reach Exposure Assessment Consumer Tool (REACT)

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Physical Form (at time of use) : Powder products

Human factors not influenced by risk management

Exposed skin surface assumed : 2082 cm²

Other given operational conditions affecting consumers exposure

Fraction of substance amount available for exposure : 1
Covers frequency up to: : 2,6 uses per day
Remarks : AISE Reach Exposure Assessment Consumer Tool (REACT)

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Ensure that splashes and spills are avoided by product design.
Consumer Measures : Ensure that direct skin contact is avoided.
Remarks : (undiluted)

8.2.3 ES 8 - CS 3: Control of consumer exposure: Consumer use (Washing and cleaning products (including solvent based products)) (PC35)

Remarks : Subcategory: Laundry and dish washing products
Textile pretreatment

Product characteristics

Concentration of the Substance in Mixture/Article : <= 2 %
Concentration of substance in product
Concentration of the Substance in Mixture/Article : <= 1,2 %
Concentration after dilution for use maximum, AISE Reach Exposure Assessment Consumer Tool (REACT)
Physical Form (at time of use) : Powder products

Human factors not influenced by risk management

Exposed skin surface assumed : 857,5 cm²

Other given operational conditions affecting consumers exposure

Fraction of substance amount available for exposure : 1
Covers frequency up to: : 0,5 uses per day
Remarks : AISE Reach Exposure Assessment Consumer Tool (REACT)

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Ensure that splashes and spills are avoided by product design.

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Consumer Measures : Ensure that direct skin contact is avoided.
Remarks : (undiluted)

8.2.4 ES 8 - CS 4: Control of consumer exposure: Consumer use (Washing and cleaning products (including solvent based products)) (PC35)

Remarks : Subcategory: Laundry and dish washing products
Clothing (all kind of materials), towel

Product characteristics

Concentration of the Substance in Mixture/Article : <= 2 %

Physical Form (at time of use) : Powder products

Amount used

Amounts used : 290 g
Remarks : (undiluted)

Human factors not influenced by risk management

Exposed skin surface assumed : 14320 cm²

Other given operational conditions affecting consumers exposure

Fraction of substance amount available for exposure : 0,01

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Ensure that splashes and spills are avoided by product design.

Consumer Measures : Ensure that direct skin contact is avoided.
Remarks : (undiluted)

8.3. ES 8 Exposure estimation and reference to its source

8.3.1 ES 8 - CS 1: Environmental release and exposure: Consumer use (Wide dispersive indoor use of processing aids in open systems) (ERC8a)

Release route	Release rate	Release estimation method
Water	0,37 kg/d	EUSES v2.1
Air	0 kg/d	EUSES v2.1
Soil	0 kg/d	EUSES v2.1

Protection target	Exposure estimation (based on EUSES v2.1)	RCR
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Freshwater	0,000596 mg/l	0,149
Freshwater sediment	0,721 mg/kg dry weight	0,149
Marine water	0,0000578 mg/l	0,145
Marine sediment	0,0699 mg/kg dry weight	0,145
Sewage treatment plant.	0,00185 mg/l	< 0,01
Indirect exposure to humans via the environment	0,0000365 mg/kg bw/day	< 0,01
Soil	0,0894 mg/kg dry weight	0,147

8.3.2 ES 8 - CS 2: Consumer exposure: Consumer use (Washing and cleaning products (including solvent based products)) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
Consumer - dermal, long-term - systemic	0,007 mg/kg bw/day (AISE Reach Exposure Assessment Consumer Tool (REACT))	< 0,01
Consumer - combined, long-term - systemic		< 0,01

8.3.3 ES 8 - CS 3: Consumer exposure: Consumer use (Washing and cleaning products (including solvent based products)) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
Consumer - dermal, long-term - systemic	0,034 mg/kg bw/day (AISE Reach Exposure Assessment Consumer Tool (REACT))	0,038
Consumer - combined, long-term - systemic		0,038

8.3.4 ES 8 - CS 4: Consumer exposure: Consumer use (Washing and cleaning products (including solvent based products)) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
Consumer - dermal, long-term - systemic	0,0000237 mg/kg bw/day (AISE Reach Exposure Assessment Consumer Tool (REACT))	< 0,01
Consumer - combined, long-term - systemic		< 0,01

8.4. ES 8 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

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ECHA guidance for downstream users
see section 2 of this exposure scenario.