

Fiche de Données de Sécurité

TURAFALLE RADIATORI LIQUIDO ML350



Fiche signalétique du 28/6/2021, révision 9

RUBRIQUE 1 — Identification de la substance/du mélange et de la société/de l'entreprise

1.1. Identificateur de produit

Identification du mélange:

Dénomination commerciale: TURAFALLE RADIATORI LIQUIDO ML350

Code commercial: 3571M

1.2. Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées

Usage recommandé :

anti-fuites pour les circuits de refroidissement des voitures

1.3. Renseignements concernant le fournisseur de la fiche de données de sécurité

Fournisseur:

Arexons S.p.A.

via Antica di Cassano, 23, 20063

Cernusco sul Naviglio (MI), Italy

Arexons S.p.A.

Tel. +39 (0)2/924361 - Fax +39 (0)2/92436306

Personne chargée de la fiche de données de sécurité:

arexons@arexons.it

1.4. Numéro d'appel d'urgence

Arexons S.p.A.

Tel. +39 (0)2/924361 - Fax +39 (0)2/92436306

Centre Antipoisons Belge 070 245 245 (7 jours sur 7, 24 heures sur 24)

centres Anti-poison Français: numéro ORFILA (INRS) : + 33 (0)1 45 42 59 59

Antigifcentrum Brussel: 80025500 (7 jours sur 7, 24 heures sur 24)

RUBRIQUE 2 — Identification des dangers

2.1. Classification de la substance ou du mélange

Critères Règlement CE 1272/2008 (CLP) :

Le produit n'est pas considéré dangereux conformément au Règlement CE 1272/2008 (CLP).

Effets physico-chimiques nocifs sur la santé humaine et l'environnement :

Aucun autre danger

2.2. Éléments d'étiquetage

Le produit n'est pas considéré dangereux conformément au Règlement CE 1272/2008 (CLP).

Pictogrammes de danger:

Aucune

Mentions de danger:

Aucune

Conseils de prudence:

Aucune

Dispositions spéciales:

EUH208 Contient du (de la) 1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one. Peut produire une réaction allergique.

Dispositions particulières conformément à l'Annexe XVII de REACH et ses amendements successifs:

Aucune

2.3. Autres dangers

Aucune substance PBT, vPvB ou perturbateurs endocriniens present en concentration $\geq 0.1\%$

Autres dangers:

Aucun autre danger

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RUBRIQUE 3 — Composition/informations sur les composants

3.1. Substances

N.A.

3.2. Mélanges

Composants dangereux aux termes du Règlement CLP et classification relative :

>= 7% - < 10% éthanediol; éthylène glycol

REACH No.: 01-2119456816-28, Numéro Index: 603-027-00-1, CAS: 107-21-1, EC: 203-473-3

⚠ 3.1/4/Oral Acute Tox. 4 H302

⚠ 3.9/2 STOT RE 2 H373

>= 0.25% - < 0.5% acide 2-éthylhexanoïque

REACH No.: 01-2119488942-23, Numéro Index: 607-230-00-6, CAS: 149-57-5, EC: 205-743-6

⚠ 3.7/2 Repr. 2 H361d

>= 0.01% - < 0.02% 1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one

Numéro Index: 613-088-00-6, CAS: 2634-33-5, EC: 220-120-9

⚠ 3.1/4/Oral Acute Tox. 4 H302

⚠ 3.2/2 Skin Irrit. 2 H315

⚠ 3.3/1 Eye Dam. 1 H318

⚠ 3.4.2/1 Skin Sens. 1 H317

⚠ 4.1/A1 Aquatic Acute 1 H400

⚠ 4.1/C2 Aquatic Chronic 2 H411

Limites de concentration spécifiques:

C >= 0,005%: EUH208

C >= 0,05%: Skin Sens. 1 H317

Estimation de la toxicité aiguë, ETA:

RUBRIQUE 4 — Premiers secours

4.1. Description des mesures de premiers secours

En cas de contact avec la peau :

Laver abondamment à l'eau et au savon.

En cas de contact avec les yeux :

En cas de contact avec les yeux, laver immédiatement et abondamment avec de l'eau et consulter un spécialiste.

En cas d'ingestion :

Ne faire vomir en aucun cas. CONSULTER IMMEDIATEMENT UN MEDECIN.

En cas d'inhalation :

Transporter la victime à l'extérieur et la maintenir au chaud et au repos.

4.2. Principaux symptômes et effets, aigus et différés

Aucun

4.3. Indication des éventuels soins médicaux immédiats et traitements particuliers nécessaires

Traitement :

Aucun

RUBRIQUE 5 — Mesures de lutte contre l'incendie

5.1. Moyens d'extinction

Moyen d'extinction approprié:

À anhydride carbonique

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À poudre
mousse

Eau nébulisée.

Moyen d'extinction non recommandé:

Ne pas utiliser de jets d'eau directs.

5.2. Dangers particuliers résultant de la substance ou du mélange

Ne pas inhaler les gaz produits par l'explosion et la combustion.

La combustion produit de la fumée lourde.

5.3. Conseils aux pompiers

Utiliser des appareils respiratoires adaptés.

Recueillir séparément l'eau contaminée utilisée pour éteindre l'incendie. Ne pas la déverser dans le réseau des eaux usées.

Si cela est faisable d'un point de vue de la sécurité, déplacer de la zone de danger immédiat les conteneurs non endommagés.

RUBRIQUE 6 — Mesures à prendre en cas de dispersion accidentelle

6.1. Précautions individuelles, équipement de protection et procédures d'urgence

Porter les dispositifs de protection individuelle.

Emmener les personnes en lieu sûr.

Consulter les mesures de protection exposées aux points 7 et 8.

6.2. Précautions pour la protection de l'environnement

Empêcher la pénétration dans le sol/sous-sol. Empêcher l'écoulement dans les eaux superficielles ou dans le réseau des eaux usées.

Retenir l'eau de lavage contaminée et l'éliminer.

En cas de fuite de gaz ou de pénétration dans les cours d'eau, le sol ou le système d'évacuation d'eau, informer les autorités responsables.

Matériel adapté à la collecte : matériel absorbant, organique, sable.

6.3. Méthodes et matériel de confinement et de nettoyage

Laver à l'eau abondante.

6.4. Référence à d'autres rubriques

Voir également les paragraphes 8 et 13.

RUBRIQUE 7 — Manipulation et stockage

7.1. Précautions à prendre pour une manipulation sans danger

Éviter le contact avec la peau et les yeux, l'inhalation de vapeurs et brouillards.

Voir également le paragraphe 8 pour les dispositifs de protection recommandés.

Ne pas manger et ne pas boire pendant le travail.

7.2. Conditions d'un stockage sûr, y compris les éventuelles incompatibilités

Conserver dans des récipient à fermeture hermétique, de préférence dans un lieu frais, loin des sources de chaleur et des rayons du soleil.

Tenir loin de la nourriture, des boissons et aliments pour animaux.

Aucune en particulier.

Indication pour les locaux:

Locaux correctement aérés.

7.3. Utilisation(s) finale(s) particulière(s)

Aucune utilisation particulière

RUBRIQUE 8 — Contrôles de l'exposition/protection individuelle

8.1. Paramètres de contrôle

éthanediol; éthylène glycol - CAS: 107-21-1

UE - TWA(8h): 52 mg/m³, 20 ppm - STEL: 104 mg/m³, 40 ppm - Remarques: Skin

ACGIH - TWA(8h): 25 ppm - STEL: 50 ppm - Remarques: (V), A4 - URT irr

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ACGIH - STEL: 10 mg/m³ - Remarques: (I, H), A4 - URT irr

acide 2-éthylhexanoïque - CAS: 149-57-5

ACGIH - TWA(8h): 5 mg/m³ - Remarques: (IFV) - Teratogenic eff

Valeurs limites d'exposition DNEL

acide 2-éthylhexanoïque - CAS: 149-57-5

Travailleur professionnel: 2 mg/kg - Consommateur: 1 mg/kg - Exposition: Cutanée humaine - Fréquence: Long terme, effets systémiques

Travailleur professionnel: 14 mg/m³ - Consommateur: 3.5 mg/m³ - Exposition: Inhalation humaine - Fréquence: Long terme, effets systémiques

Consommateur: 1 mg/kg - Exposition: Orale humaine - Fréquence: Long terme, effets systémiques

Valeurs limites d'exposition PNEC

acide 2-éthylhexanoïque - CAS: 149-57-5

Cible: Eau douce - valeur: 0.36 mg/l

Cible: Eau marine - valeur: 0.03 mg/l

Cible: Sédiments d'eau douce - valeur: 6.37 mg/kg

Cible: Sédiments d'eau marine - valeur: 0.63 mg/kg

Cible: O9 - valeur: 71.7 mg/l

8.2. Contrôles de l'exposition

Protection des yeux:

Lunettes avec protection latérale.

Conforme à la norme EN 166

Protection de la peau:

vêtements de protection

Protection des mains:

Gants en nitrile ou Viton.

Conforme à la norme EN 374.

Protection respiratoire:

N'est pas nécessaire en cas d'utilisation normale.

Risques thermiques :

Aucun

Contrôles de l'exposition environnementale :

Aucun

Contrôles techniques appropriés

Aucun

RUBRIQUE 9 — Propriétés physiques et chimiques

9.1. Informations sur les propriétés physiques et chimiques essentielles

Propriétés	valeur	Méthode :	Remarques
État physique:	Liquide	--	--
Couleur:	brun foncé	--	--
Odeur:	caractéristique	--	--
Point de fusion/point de congélation:	0°C	--	--
Point d'ébullition ou point initial d'ébullition et intervalle d'ébullition:	100°C	--	--
Inflammabilité:	N.A.	--	--
Limites inférieure et	N.A.	--	--

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supérieure d'explosion:			
Point éclair:	Pas inflammable	--	--
Température d'auto-inflammabilité :	Pas applicable	--	--
Température de décomposition:	N.A.	--	--
pH :	8.50	--	--
Viscosité cinématique:	> 20,5 mm ² /sec (40 °C)	--	--
Hydrosolubilité:	soluble	--	--
Solubilité dans l'huile :	insoluble	--	--
Coefficient de partage n-octanol/eau (valeur log):	Pas disponible	--	--
Pression de vapeur:	Pas disponible	--	--
Densité et/ou densité relative:	1.034 g/cm ³	--	--
Densité de vapeur relative:	Pas disponible	--	--
Caractéristiques des particules:			
Taille des particules:	N.A.	--	--
9.2. Autres informations Pas autres informations importantes			
Propriétés explosives:	Pas applicable	--	--
Vitesse d'évaporation :	Pas disponible	--	--
Conductibilité:	Pas disponible	--	--
Viscosité:	>90	--	--
Propriétés comburantes:	Pas applicable	--	--

RUBRIQUE 10 — Stabilité et réactivité

- 10.1. Réactivité
Stable en conditions normales
- 10.2. Stabilité chimique
Stable en conditions normales
- 10.3. Possibilité de réactions dangereuses
Aucun
- 10.4. Conditions à éviter
Stable dans des conditions normales.

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- 10.5. Matières incompatibles
Aucune en particulier.
- 10.6. Produits de décomposition dangereux
Aucun.

RUBRIQUE 11 — Informations toxicologiques

11.1. Informations sur les classes de danger telles que définies dans le règlement (CE) no 1272/2008
Informations toxicologiques sur le produit :

TURAFALLE RADIATORI LIQUIDO ML350

- a) toxicité aiguë
Non classé
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- b) corrosion cutanée/irritation cutanée
Non classé
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- c) lésions oculaires graves/irritation oculaire
Non classé
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- d) sensibilisation respiratoire ou cutanée
Non classé
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- e) mutagénicité sur les cellules germinales
Non classé
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- f) cancérogénicité
Non classé
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- g) toxicité pour la reproduction
Non classé
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- h) toxicité spécifique pour certains organes cibles — exposition unique
Non classé
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- i) toxicité spécifique pour certains organes cibles – exposition répétée
Non classé
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- j) danger par aspiration
Non classé
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

Informations toxicologiques sur les substances principales se trouvant dans le produit :

acide 2-éthylhexanoïque - CAS: 149-57-5

- a) toxicité aiguë:
Test: LD50 - Voie: Orale - Espèces: Rat = 2043 mg/kg
Test: LD50 - Voie: Peau - Espèces: Rat > 2000 mg/kg
Test: LC0 - Voie: Inhalation - Espèces: Rat = 0.11 mg/l - Durée: 8h
- 1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one - CAS: 2634-33-5

- a) toxicité aiguë:
Test: LD50 - Voie: Orale - Espèces: Rat 1193 mg/kg
Test: LD50 - Voie: Peau - Espèces: Rat 4115 mg/kg
- b) corrosion cutanée/irritation cutanée:
Test: Irritant pour la peau Positif
- c) lésions oculaires graves/irritation oculaire:
Test: Corrosif pour les yeux Positif
- d) sensibilisation respiratoire ou cutanée:
Test: Sensibilisation de la peau - Voie: Peau Positif

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- 11.2. Informations sur les autres dangers
Propriétés perturbantes le système endocrinien:
Aucun perturbateur endocrinien present en concentration $\geq 0.1\%$

RUBRIQUE 12 — Informations écologiques

- 12.1. Toxicité
Utiliser le produit rationnellement en évitant de le disperser dans la nature.
acide 2-éthylhexanoïque - CAS: 149-57-5
a) Toxicité aquatique aiguë:
Point final: LC50 - Espèces: Poissons > 302 mg/l - Durée h: 48
Point final: EC50 - Espèces: Daphnie = 85.4 mg/l - Durée h: 48
Point final: EC50 - Espèces: Algues = 49.3 mg/l - Durée h: 72
1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one - CAS: 2634-33-5
a) Toxicité aquatique aiguë:
Point final: LC50 - Espèces: Poissons 2.18 mg/l - Durée h: 96
Point final: EC50 - Espèces: Daphnie 2.94 mg/l - Durée h: 48
Point final: CE6 - Espèces: Algues 0.11 mg/l - Durée h: 72
- 12.2. Persistance et dégradabilité
Aucun
acide 2-éthylhexanoïque - CAS: 149-57-5
Test: OECD 302B - Durée h: 6 days - %: 85-95
1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one - CAS: 2634-33-5
Biodégradabilité: Rapidement dégradable - Test: BIOGDG06
- 12.3. Potentiel de bioaccumulation
N.A.
- 12.4. Mobilité dans le sol
N.A.
- 12.5. Résultats des évaluations PBT et vPvB
Substances vPvB: Aucune - Substances PBT: Aucune
- 12.6. Propriétés perturbant le système endocrinien
Aucun perturbateur endocrinien present en concentration $\geq 0.1\%$
- 12.7. Autres effets néfastes
Aucun

RUBRIQUE 13 — Considérations relatives à l'élimination

- 13.1. Méthodes de traitement des déchets
Récupérer si possible. Opérer en respectant les dispositions locales et nationales en vigueur.
Information supplémentaires sur l'élimination:
Récupérer si possible. Opérer conformément aux dispositions locales et nationales en vigueur.

RUBRIQUE 14 — Informations relatives au transport

- 14.1. Numéro ONU ou numéro d'identification
Produit non dangereux au sens des réglementations de transport.
- 14.2. Désignation officielle de transport de l'ONU
N.A.
- 14.3. Classe(s) de danger pour le transport
N.A.
- 14.4. Groupe d'emballage
N.A.
- 14.5. Dangers pour l'environnement
ADR-Polluant environnemental: Non
IMDG-Marine polluant: Non

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14.6. Précautions particulières à prendre par l'utilisateur
N.A.

14.7. Transport maritime en vrac conformément aux instruments de l'OMI
N.A.

RUBRIQUE 15 — Informations relatives à la réglementation

15.1. Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement

Dir. 98/24/CE (Risques dérivant d'agents chimiques pendant le travail)

Dir. 2000/39/CE (Limites d'exposition professionnelle)

Règlement (CE) n° 1907/2006 (REACH)

Règlement (CE) n° 1272/2008 (CLP)

Règlement (CE) n° 790/2009 (ATP 1 CLP) et (EU) n° 758/2013

Règlement (EU) n° 2020/878

Règlement (EU) n° 286/2011 (ATP 2 CLP)

Règlement (EU) n° 618/2012 (ATP 3 CLP)

Règlement (EU) n° 487/2013 (ATP 4 CLP)

Règlement (EU) n° 944/2013 (ATP 5 CLP)

Règlement (EU) n° 605/2014 (ATP 6 CLP)

Règlement (EU) n° 2015/1221 (ATP 7 CLP)

Règlement (EU) n° 2016/918 (ATP 8 CLP)

Règlement (EU) n° 2016/1179 (ATP 9 CLP)

Règlement (EU) n° 2017/776 (ATP 10 CLP)

Règlement (EU) n° 2018/669 (ATP 11 CLP)

Règlement (EU) n° 2018/1480 (ATP 13 CLP)

Règlement (EU) n° 2019/521 (ATP 12 CLP)

Restrictions liées au produit ou aux substances contenues conformément à l'Annexe XVII de la Réglementation (CE) 1907/2006 (REACH) et ses modifications successives:

Restrictions liées au produit:

Aucune restriction.

Restrictions liées aux substances contenues:

Aucune restriction.

Composés Organiques Volatils - COV = 9.58 %

Composés Organiques Volatils - COV = 95.84 g/Kg

Composés Organiques Volatils - COV = 99.10 g/l

Se référer aux normes suivantes lorsqu'elles sont applicables:

Directive 2012/18/UE (Seveso III)

Règlement (CE) no 648/2004 (détergents).

Dir. 2004/42/CE (Directive COV)

Dispositions relatives aux directive EU 2012/18 (Seveso III):

Catégorie Seveso III conformément à l'Annexe 1, partie 1

Aucun

15.2. Évaluation de la sécurité chimique

Aucune évaluation de la sécurité chimique n'a été effectuée pour le mélange

Substances pour lesquelles une évaluation de la sécurité chimique a été effectuée :

Aucune

RUBRIQUE 16 — Autres informations

Texte des phrases cités à la section 3:

H302 Nocif en cas d'ingestion.

H373 Risque présumé d'effets graves pour les organes (reins) à la suite d'expositions répétées ou d'une exposition prolongée par ingestion.

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H361d Susceptible de nuire au fœtus.
H315 Provoque une irritation cutanée.
H318 Provoque de graves lésions des yeux.
H317 Peut provoquer une allergie cutanée.
H400 Très toxique pour les organismes aquatiques.
H411 Toxique pour les organismes aquatiques, entraîne des effets néfastes à long terme.
EUH208 Contient . Peut produire une réaction allergique.

Classe de danger et catégorie de danger	Code	Description
Acute Tox. 4	3.1/4/Oral	Toxicité aiguë (par voie orale), Catégorie 4
Skin Irrit. 2	3.2/2	Irritation cutanée, Catégorie 2
Eye Dam. 1	3.3/1	Lésions oculaires graves, Catégorie 1
Skin Sens. 1	3.4.2/1	Sensibilisation cutanée, Catégorie 1
Repr. 2	3.7/2	Toxicité pour la reproduction, Catégorie 2
STOT RE 2	3.9/2	Toxicité spécifique pour certains organes cibles —Exposition répétée STOT rép., Catégorie 2
Aquatic Acute 1	4.1/A1	Danger aigu pour le milieu aquatique, Catégorie 1
Aquatic Chronic 2	4.1/C2	Danger chronique (à long terme) pour le milieu aquatique, Catégorie 2

Paragraphe modifiés de la révision précédente:

RUBRIQUE 2 — Identification des dangers
RUBRIQUE 3 — Composition/informations sur les composants
RUBRIQUE 8 — Contrôles de l'exposition/protection individuelle
RUBRIQUE 9 — Propriétés physiques et chimiques
RUBRIQUE 11 — Informations toxicologiques
RUBRIQUE 12 — Informations écologiques
RUBRIQUE 14 — Informations relatives au transport
RUBRIQUE 15 — Informations relatives à la réglementation
RUBRIQUE 16 — Autres informations

Ce document a été préparé par une personne compétente qui a été formée de façon appropriée.

Principales sources bibliographiques:

ECDIN - Réseau d'information et Informations chimiques sur l'environnement - Centre de recherche commun, Commission de la Communauté Européenne

PROPRIÉTÉS DANGEREUSES DES MATÉRIAUX INDUSTRIELS DE SAX - Huitième Edition - Van Nostrand Reinold

Les informations contenues se basent sur nos connaissances à la date reportée ci-dessus. Elles se réfèrent uniquement au produit indiqué et ne constituent pas de garantie d'une qualité particulière. L'utilisateur doit s'assurer de la conformité et du caractère complet de ces informations par rapport à l'utilisation spécifique qu'il doit en faire.

Cette fiche annule et remplace toute édition précédente.

ADR: Accord européen relatif au transport international des marchandises

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	dangereuses par route.
CAS:	Service des résumés analytiques de chimie (division de la Société Chimique Américaine).
CLP:	Classification, Etiquetage, Emballage.
DNEL:	Niveau dérivé sans effet.
EINECS:	Inventaire européen des substances chimiques commerciales existantes.
ETA:	Estimation de la toxicité aiguë, ETA
ETAmélange:	Estimation de la toxicité aiguë (Mélanges)
GefStoffVO:	Ordonnance sur les substances dangereuses, Allemagne.
GHS:	Système général harmonisé de classification et d'étiquetage des produits chimiques.
IATA:	Association internationale du transport aérien.
IATA-DGR:	Réglementation pour le transport des marchandises dangereuses par l'"Association internationale du transport aérien" (IATA).
ICAO:	Organisation de l'aviation civile internationale.
ICAO-TI:	Instructions techniques par l'"Organisation de l'aviation civile internationale" (OACI).
IMDG:	Code maritime international des marchandises dangereuses.
INCI:	Nomenclature internationale des ingrédients cosmétiques.
KSt:	Coefficient d'explosion.
LC50:	Concentration létale pour 50 pour cent de la population testée.
LD50:	Dose létale pour 50 pour cent de la population testée.
NA:	Non applicable
PNEC:	Concentration prévue sans effets.
RID:	Règlement concernant le transport international ferroviaire des marchandises dangereuses.
STEL:	Limite d'exposition à court terme.
STOT:	Toxicité spécifique pour certains organes cibles.
TLV:	Valeur de seuil limite.
TWA:	Moyenne pondérée dans le temps
WGK:	Classe allemande de danger pour l'eau.

Exposure Scenario, 19/07/2019

Substance identity	
Chemical name	ETHYLENE GLYCOL
CAS No.	107-21-1
EINECS No.	203-473-3

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2. **ES 2** Widespread use by professional workers
3. **ES 3** Widespread use by professional workers
4. **ES 4** Consumer use; Various products (PC9a, PC1, PC4, PC8, PC15)

1. ES 1 Use at industrial site

1.1 TITLE SECTION

Exposure Scenario name	Use in cleaning agents
Date - Version	18/07/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3)

Environment Contributing Scenario

CS1 Covered by	ERC4
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Worker Contributing Scenario

CS2 Industrial	PROC1
CS3 Industrial	PROC2
CS4 Industrial	PROC3
CS5 Industrial	PROC4
CS6 Industrial	PROC8b
CS7 Industrial	PROC7
CS8 Industrial	PROC8a
CS9 Industrial	PROC10
CS10 Industrial	PROC13

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario: Covered by (ERC4)

Environmental release categories	Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)
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Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

0.123 hPa

1.2. CS2: Worker Contributing Scenario: Industrial (PROC1)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)
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Product (article) characteristics

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Use frequency 240 days per year

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Other conditions affecting worker exposure

Indoor use

1.2. CS3: Worker Contributing Scenario: Industrial (PROC2)

Process Categories

Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Use frequency 240 days per year

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Other conditions affecting worker exposure

Indoor use

1.2. CS4: Worker Contributing Scenario: Industrial (PROC3)

Process Categories

Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Product (article) characteristics

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Use frequency 240 days per year

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Other conditions affecting worker exposure

Indoor use

1.2. CS5: Worker Contributing Scenario: Industrial (PROC4)

Process Categories

Chemical production where opportunity for exposure arises (PROC4)

Product (article) characteristics

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Use frequency 240 days per year

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Other conditions affecting worker exposure

Indoor use

1.2. CS6: Worker Contributing Scenario: Industrial (PROC8b)**Process Categories**

Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

Product (article) characteristics**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure**Duration:**

Covers daily exposures up to 8 hours

Frequency:

Use frequency 240 days per year

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Wear suitable gloves tested to EN374.

Other conditions affecting worker exposure

Indoor use

1.2. CS7: Worker Contributing Scenario: Industrial (PROC7)**Process Categories**

Industrial spraying (PROC7)

Product (article) characteristics**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure**Amounts used:**

Amount per use 1 L/min

Duration:

Covers daily exposures up to 8 hours

Frequency:

Use frequency 5 days per week

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Wear suitable gloves tested to EN374.

Dermal - minimum efficiency of: 90 %

Other conditions affecting worker exposure

Indoor use

Room size: Covers use in room size of > 1000 m³**1.2. CS8: Worker Contributing Scenario: Industrial (PROC8a)****Process Categories**

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)

Product (article) characteristics**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Use frequency 240 days per year

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Other conditions affecting worker exposure

Indoor use

Ventilation rate: > 90 %

1.2. CS9: Worker Contributing Scenario: Industrial (PROC10)

Process Categories

Roller application or brushing (PROC10)

Product (article) characteristics

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Use frequency 240 days per year

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Use suitable eye protection.

Other conditions affecting worker exposure

Indoor use

1.2. CS10: Worker Contributing Scenario: Industrial (PROC13)

Process Categories

Treatment of articles by dipping and pouring (PROC13)

Product (article) characteristics

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Use frequency 240 days per year

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Use suitable eye protection.

Other conditions affecting worker exposure

Indoor use

1.3 Exposure estimation and reference to its source

1.3. CS2: Worker Contributing Scenario: Industrial (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.001
inhalative, local, long-term	N/A	EASY TRA v2.0	0.001
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.003
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.004

1.3. CS3: Worker Contributing Scenario: Industrial (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.07
inhalative, local, long-term	N/A	EASY TRA v2.0	0.07
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.01
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.08

1.3. CS4: Worker Contributing Scenario: Industrial (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.22
inhalative, local, long-term	N/A	EASY TRA v2.0	0.22
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.003
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.223

1.3. CS5: Worker Contributing Scenario: Industrial (PROC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.37
inhalative, local, long-term	N/A	EASY TRA v2.0	0.37
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.06
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.43

1.3. CS6: Worker Contributing Scenario: Industrial (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.37

inhalative, local, long-term	N/A	EASY TRA v2.0	0.37
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.06
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.43

1.3. CS7: Worker Contributing Scenario: Industrial (PROC7)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.28
inhalative, local, long-term	N/A	EASY TRA v2.0	0.28
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.52
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.8

1.3. CS8: Worker Contributing Scenario: Industrial (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.37
inhalative, local, long-term	N/A	EASY TRA v2.0	0.37
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.06
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.43

1.3. CS9: Worker Contributing Scenario: Industrial (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.74
inhalative, local, long-term	N/A	EASY TRA v2.0	0.74
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.03
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.77

1.3. CS10: Worker Contributing Scenario: Industrial (PROC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.74
inhalative, local, long-term	N/A	EASY TRA v2.0	0.74
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.01

combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.75
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1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

2. ES 2 Widespread use by professional workers

2.1 TITLE SECTION

Exposure Scenario name	Use in cleaning agents
Date - Version	19/07/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

Environment Contributing Scenario

CS1 Covered by	ERC8a - ERC8d
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Worker Contributing Scenario

CS2 General use from professional operators	PROC1
CS3 General use from professional operators	PROC2
CS4 General use from professional operators	PROC3
CS5 General use from professional operators	PROC4
CS6 General use from professional operators	PROC8b
CS7 General use from professional operators	PROC8a
CS8 General use from professional operators	PROC10
CS9 General use from professional operators	PROC11
CS10 General use from professional operators	PROC13

2.2 Conditions of use affecting exposure

2.2. CS1: Environment Contributing Scenario: Covered by (ERC8a, ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)
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Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

0.123 hPa

2.2. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)
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Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Use frequency 240 days per year

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Wear suitable gloves tested to EN374.

Use suitable eye protection.

Other conditions affecting worker exposure

Indoor use

2.2. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)**Process Categories**

Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics**Physical form of product:**

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure**Duration:**

Covers daily exposures up to 8 hours

Frequency:

Use frequency 240 days per year

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Wear suitable gloves tested to EN374.

Use suitable eye protection.

Other conditions affecting worker exposure

Indoor use

2.2. CS4: Worker Contributing Scenario: General use from professional operators (PROC3)**Process Categories**

Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Product (article) characteristics**Physical form of product:**

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure**Duration:**

Covers daily exposures up to 8 hours

Frequency:

Use frequency 240 days per year

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Wear suitable gloves tested to EN374.

Use suitable eye protection.

Other conditions affecting worker exposure

Indoor use

2.2. CS5: Worker Contributing Scenario: General use from professional operators (PROC4)

Process Categories	Chemical production where opportunity for exposure arises (PROC4)
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Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Use frequency 240 days per year

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Use suitable eye protection.

Other conditions affecting worker exposure

Indoor use

2.2. CS6: Worker Contributing Scenario: General use from professional operators (PROC8b)

Process Categories	Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)
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Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Use frequency 240 days per year

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Use suitable eye protection.

Other conditions affecting worker exposure

Indoor use

2.2. CS7: Worker Contributing Scenario: General use from professional operators (PROC8a)

Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)
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Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Use frequency 240 days per year

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Wear suitable gloves tested to EN374.

Use suitable eye protection.

Other conditions affecting worker exposure

Indoor use

Ventilation rate: 80 %**2.2. CS8: Worker Contributing Scenario: General use from professional operators (PROC10)****Process Categories**

Roller application or brushing (PROC10)

Product (article) characteristics**Physical form of product:**

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure**Duration:**

Covers daily exposures up to 8 hours

Frequency:

Use frequency 240 days per year

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Wear suitable gloves tested to EN374.

Use suitable eye protection.

Wear suitable respiratory protection.

Inhalation - minimum efficiency of: 80 %

Other conditions affecting worker exposure

Indoor use

Ventilation rate: 80 %**2.2. CS9: Worker Contributing Scenario: General use from professional operators (PROC11)****Process Categories**

Non industrial spraying (PROC11)

Product (article) characteristics**Physical form of product:**

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure**Amounts used:**

Amount per use 0.05 L/min

Duration:

Exposure duration 180 min

Frequency:

Use frequency < 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374. Use suitable eye protection.	Inhalation - minimum efficiency of: 90 %
Wear suitable respiratory protection.	Inhalation - minimum efficiency of: 80 %

Other conditions affecting worker exposure

Indoor use

Room size: Covers use in room size of > 100 m³

Ventilation rate: 80 %

2.2. CS10: Worker Contributing Scenario: General use from professional operators (PROC13)

Process Categories Treatment of articles by dipping and pouring (PROC13)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Use frequency < 240 days per year

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374. Use suitable eye protection.	Inhalation - minimum efficiency of: 90 %
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Other conditions affecting worker exposure

Indoor use

2.3 Exposure estimation and reference to its source

2.3. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.001
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.001
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.003

dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.004
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2.3. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.37
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.37
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.01
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.38

2.3. CS4: Worker Contributing Scenario: General use from professional operators (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.22
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.22
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.003
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.223

2.3. CS5: Worker Contributing Scenario: General use from professional operators (PROC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.74
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.74
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.006
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.8

2.3. CS6: Worker Contributing Scenario: General use from professional operators (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.74
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.74
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.06
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.8

2.3. CS7: Worker Contributing Scenario: General use from professional operators (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.37
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.37
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.13
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.5

2.3. CS8: Worker Contributing Scenario: General use from professional operators (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.37
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.37
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.3
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.4

2.3. CS9: Worker Contributing Scenario: General use from professional operators (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.4
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.4
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.51
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.91

2.3. CS10: Worker Contributing Scenario: General use from professional operators (PROC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.74
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.74
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.01
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.75

2.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

3. ES 3 Widespread use by professional workers

3.1 TITLE SECTION

Exposure Scenario name	Use in antifreeze products
Date - Version	19/07/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

Environment Contributing Scenario

CS1 Covered by	ERC8d
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Worker Contributing Scenario

CS2 General use from professional operators	PROC1
CS3 General use from professional operators	PROC2
CS4 General use from professional operators	PROC8a
CS5 General use from professional operators	PROC8b
CS6 General use from professional operators	PROC11

3.2 Conditions of use affecting exposure

3.2. CS1: Environment Contributing Scenario: Covered by (ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d)
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Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

0.123 hPa

3.2. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)
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Product (article) characteristics

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Covers exposure up to 240 days per year

Technical and organisational conditions and measures

Technical and organisational measures

Use in contained systems

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Other conditions affecting worker exposure

Indoor use

3.2. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)

Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)
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Product (article) characteristics

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Covers exposure up to 240 days per year

Technical and organisational conditions and measures

Technical and organisational measures

Use in contained systems

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Other conditions affecting worker exposure

Indoor use

3.2. CS4: Worker Contributing Scenario: General use from professional operators (PROC8a)

Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)
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Product (article) characteristics

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Covers exposure up to 240 days per year

Technical and organisational conditions and measures

Technical and organisational measures

Use in contained systems

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.	
Wear suitable respiratory protection.	Inhalation - minimum efficiency of: 80 %

Other conditions affecting worker exposure

Indoor use

Ventilation rate: 80 %

3.2. CS5: Worker Contributing Scenario: General use from professional operators (PROC8b)

Process Categories	Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)
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Product (article) characteristics

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Covers exposure up to 240 days per year

Technical and organisational conditions and measures

Technical and organisational measures

Use in contained systems

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Other conditions affecting worker exposure

Indoor use

3.2. CS6: Worker Contributing Scenario: General use from professional operators (PROC11)

Process Categories

Non industrial spraying (PROC11)

Product (article) characteristics

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Exposure duration 180 min

Frequency:

Covers exposure up to 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures

Use in contained systems

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Dermal - minimum efficiency of: 90 %

Other conditions affecting worker exposure

Indoor use

Room size: Covers use in room size of > 100 m³

3.3 Exposure estimation and reference to its source

3.3. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.001
inhalative, local, long-term	N/A	EASY TRA v2.0	0.001
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.003

combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.004
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3.3. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.37
inhalative, local, long-term	N/A	EASY TRA v2.0	0.37
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.01
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.38

3.3. CS4: Worker Contributing Scenario: General use from professional operators (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.37
inhalative, local, long-term	N/A	EASY TRA v2.0	0.37
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.13
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.5

3.3. CS5: Worker Contributing Scenario: General use from professional operators (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.74
inhalative, local, long-term	N/A	EASY TRA v2.0	0.74
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.06
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.8

3.3. CS6: Worker Contributing Scenario: General use from professional operators (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.4
inhalative, local, long-term	N/A	EASY TRA v2.0	0.4
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.51
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.91

3.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

4. ES 4 Consumer use; Various products (PC9a, PC1, PC4, PC8, PC15)

4.1 TITLE SECTION

Exposure Scenario name	Consumer goods
Date - Version	19/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Product Categories	Coatings and paints, thinners, paint removers (PC9a) - Adhesives, sealants (PC1) - Anti-freeze and de-icing products (PC4) - Biocidal products (PC8) - Non-metal surface treatment products (PC15) - Heat transfer fluids (PC16) - Hydraulic fluids (PC17) - Ink and toners (PC18) - Leather treatment products (PC23) - Polishes and wax blends (PC31) - Polymer preparations and compounds (PC32) - Textile dyes and impregnating products (PC34) - Washing and cleaning products (PC35)

Environment Contributing Scenario

CS1 Covered by	ERC8a - ERC8c - ERC8d - ERC8f - ERC9a - ERC9b
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Consumer Contributing Scenario

CS2 Consumer	PC1
CS3 Consumer	PC4 - PC16 - PC17 - PC4_1
CS4 Consumer	PC4 - PC4_2
CS5 Consumer	PC9a - PC15 - PC9a_2, PC15_2
CS6 Consumer	PC8
CS7 Consumer	PC18
CS8 Consumer	PC31
CS9 Consumer	PC32
CS10 Consumer	PC35 - PC8_2, PC35_2
CS11 Consumer	PC35 - PC8_3, PC35_3
CS12 Consumer	PC15 - PC23 - PC34 - PC9a_1, PC15_1

4.2 Conditions of use affecting exposure

4.2. CS1: Environment Contributing Scenario: Covered by (ERC8a, ERC8c, ERC8d, ERC8f, ERC9a, ERC9b)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use leading to inclusion into/onto article (indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) - Widespread use leading to inclusion into/onto article (outdoor) - Widespread use of functional fluid (indoor) - Widespread use of functional fluid (outdoor) (ERC8a, ERC8c, ERC8d, ERC8f, ERC9a, ERC9b)
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Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

4.2. CS2: Consumer Contributing Scenario: Consumer (PC1)

Product Categories	Adhesives, sealants (PC1)
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<i>Product (article) characteristics</i>	
Concentration of substance in product: Covers concentrations up to 0.75 %	
4.2. CS3: Consumer Contributing Scenario: Consumer (PC4, PC16, PC17)	
Product Categories	Anti-freeze and de-icing products - Heat transfer fluids - Hydraulic fluids (PC4, PC16, PC17)
Product (Sub-)Categories	Washing car window (PC4_1)
<i>Product (article) characteristics</i>	
Concentration of substance in product: Covers concentrations up to 45 %	
<i>Amount used, frequency and duration of use/exposure</i>	
Duration: Exposure duration < 15 min	
4.2. CS4: Consumer Contributing Scenario: Consumer (PC4)	
Product Categories	Anti-freeze and de-icing products (PC4)
Product (Sub-)Categories	Pouring into radiator (PC4_2)
<i>Product (article) characteristics</i>	
Concentration of substance in product: Covers percentage substance in the product up to 100 %.	
4.2. CS5: Consumer Contributing Scenario: Consumer (PC9a, PC15)	
Product Categories	Coatings and paints, thinners, paint removers - Non-metal surface treatment products (PC9a, PC15)
Product (Sub-)Categories	Solvent rich, high solid, water borne paint (PC9a_2, PC15_2)
<i>Product (article) characteristics</i>	
Concentration of substance in product: Covers concentrations up to 10 %	
4.2. CS6: Consumer Contributing Scenario: Consumer (PC8)	
Product Categories	Biocidal products (PC8)
4.2. CS7: Consumer Contributing Scenario: Consumer (PC18)	
Product Categories	Ink and toners (PC18)
<i>Product (article) characteristics</i>	
Concentration of substance in product: Covers percentage substance in the product up to 5 %.	
4.2. CS8: Consumer Contributing Scenario: Consumer (PC31)	
Product Categories	Polishes and wax blends (PC31)
<i>Product (article) characteristics</i>	
Concentration of substance in product: Covers concentrations up to 10 %	
4.2. CS9: Consumer Contributing Scenario: Consumer (PC32)	
Product Categories	Polymer preparations and compounds (PC32)
<i>Product (article) characteristics</i>	
Concentration of substance in product: Covers percentage substance in the product up to 5 %.	
4.2. CS10: Consumer Contributing Scenario: Consumer (PC35)	

Product Categories	Washing and cleaning products (PC35)
Product (Sub-)Categories	Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) (PC8_2, PC35_2)

Product (article) characteristics

Concentration of substance in product:

Covers concentrations up to 20 %

4.2. CS11: Consumer Contributing Scenario: Consumer (PC35)

Product Categories	Washing and cleaning products (PC35)
Product (Sub-)Categories	Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) (PC8_3, PC35_3)

Product (article) characteristics

Concentration of substance in product:

Covers percentage substance in the product up to 5 %.

4.2. CS12: Consumer Contributing Scenario: Consumer (PC15, PC23, PC34)

Product Categories	Non-metal surface treatment products - Leather treatment products - Textile dyes and impregnating products (PC15, PC23, PC34)
Product (Sub-)Categories	Waterborne latex wall paint (PC9a_1, PC15_1)

4.3 Exposure estimation and reference to its source

4.2. CS2: Consumer Contributing Scenario: Consumer (PC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0.59
dermal, systemic, long-term	N/A	N/A	0.005
combined routes, systemic, long-term	N/A	N/A	0.505

4.2. CS3: Consumer Contributing Scenario: Consumer (PC4, PC16, PC17)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0.28
dermal, systemic, long-term	N/A	N/A	0.08
combined routes, systemic, long-term	N/A	N/A	0.36

4.2. CS4: Consumer Contributing Scenario: Consumer (PC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0
dermal, systemic, long-term	N/A	N/A	0.09
combined routes, systemic, long-term	N/A	N/A	0.09

4.2. CS5: Consumer Contributing Scenario: Consumer (PC9a, PC15)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0.04
dermal, systemic, long-term	N/A	N/A	0.02
combined routes, systemic, long-term	N/A	N/A	0.06

4.2. CS6: Consumer Contributing Scenario: Consumer (PC8)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0
dermal, systemic, long-term	N/A	N/A	0.006
combined routes, systemic, long-term	N/A	N/A	0.006

4.2. CS7: Consumer Contributing Scenario: Consumer (PC18)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0.18
dermal, systemic, long-term	N/A	N/A	0
combined routes, systemic, long-term	N/A	N/A	0.18

4.2. CS8: Consumer Contributing Scenario: Consumer (PC31)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0.56
dermal, systemic, long-term	N/A	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.6

4.2. CS9: Consumer Contributing Scenario: Consumer (PC32)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0.009
dermal, systemic, long-term	N/A	N/A	0.001
combined routes, systemic, long-term	N/A	N/A	0.01

4.2. CS10: Consumer Contributing Scenario: Consumer (PC35)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0.09
dermal, systemic, long-term	N/A	N/A	0.22
combined routes, systemic, long-term	N/A	N/A	0.31

4.2. CS11: Consumer Contributing Scenario: Consumer (PC35)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0.02
dermal, systemic, long-term	N/A	N/A	0.002
combined routes, systemic, long-term	N/A	N/A	0.022

4.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Exposure Scenario, 25/07/2019

Substance identity	
Chemical name	2-ETHYLHEXANOIC ACID
CAS No.	149-57-5
EINECS No.	205-743-6

Table of contents

1. **ES 1** Use at industrial site
2. **ES 2** Widespread use by professional workers

1. ES 1 Use at industrial site

1.1 TITLE SECTION

Exposure Scenario name	Hydraulic (functional) fluids
Date - Version	25/07/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3)

Environment Contributing Scenario

CS1 Covered by	ERC7
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Worker Contributing Scenario

CS2 Industrial	PROC1
CS3 Industrial	PROC2
CS4 Industrial	PROC3
CS5 Industrial	PROC4
CS6 Industrial	PROC8a
CS7 Industrial	PROC8b
CS8 Industrial	PROC9

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario: Covered by (ERC7)

Environmental release categories	Use of functional fluid at industrial site (ERC7)
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Amount used, frequency and duration of use (or from service life)

Amounts used:

Annual amount per site 200 t(tonnes)/year
Daily amount per site 2 t

Maximum allowable site tonnage (MSafe): 5282 kg/day

Release type: Continuous release

Emission days: 100 days per year

Conditions and measures related to sewage treatment plant

STP type:

Municipal Sewage Treatment Plant
Water - minimum efficiency of: = 87.5 %

STP effluent (m³/day): 2000

Conditions and measures related to treatment of waste (including article waste)

Waste treatment

External recovery and recycling of waste should comply with applicable local and/or national regulations.

Other conditions affecting environmental exposure

Local marine water dilution factor: 100

Local freshwater dilution factor: 10

Receiving surface water flow: 18000 m³/day

1.2. CS2: Worker Contributing Scenario: Industrial (PROC1)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)
Product (article) characteristics	
Vapour pressure: < 5 hPa	
Concentration of substance in product: Covers percentage substance in the product up to 25 %.	
Amount used, frequency and duration of use/exposure	
Duration: Exposure duration < 8 h	
Frequency: Covers exposure up to 5 days per week	
Other conditions affecting worker exposure	
Indoor use	
Body parts exposed: Palm of one hand	
Additional conditions human health Covers skin contact area up to 240 cm ²	

1.2. CS3: Worker Contributing Scenario: Industrial (PROC2)

Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)
Product (article) characteristics	
Vapour pressure: < 5 hPa	
Concentration of substance in product: Covers percentage substance in the product up to 25 %.	
Amount used, frequency and duration of use/exposure	
Duration: Exposure duration < 8 h	
Frequency: Covers exposure up to 5 days per week	
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection	
Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: > 95 %
Other conditions affecting worker exposure	
Indoor use	
Body parts exposed: Assumes that potential dermal contact is limited to hands.	
Additional conditions human health Covers skin contact area up to 480 cm ²	

1.2. CS4: Worker Contributing Scenario: Industrial (PROC3)

Process Categories	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)
Product (article) characteristics	

Vapour pressure:

< 5 hPa

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure**Duration:**

Exposure duration < 8 h

Frequency:

Covers exposure up to 5 days per week

Technical and organisational conditions and measures**Technical and organisational measures**

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

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Wear suitable gloves tested to EN374.

Dermal - minimum efficiency of: > 95 %

Other conditions affecting worker exposure

Indoor use

Body parts exposed:

Palm of one hand

Additional conditions human health

Covers skin contact area up to 240 cm²

1.2. CS5: Worker Contributing Scenario: Industrial (PROC4)**Process Categories**

Chemical production where opportunity for exposure arises (PROC4)

Product (article) characteristics**Vapour pressure:**

< 5 hPa

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure**Duration:**

Exposure duration < 8 h

Frequency:

Covers exposure up to 5 days per week

Technical and organisational conditions and measures**Technical and organisational measures**

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

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Wear suitable gloves tested to EN374.

Dermal - minimum efficiency of: > 95 %

Other conditions affecting worker exposure

Indoor use

Body parts exposed:

Assumes that potential dermal contact is limited to hands.

Additional conditions human health

Covers skin contact area up to 480 cm²

1.2. CS6: Worker Contributing Scenario: Industrial (PROC8a)

Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)
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Product (article) characteristics

Vapour pressure:

< 5 hPa

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:

Exposure duration < 4 h

Frequency:

Covers exposure up to 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures

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

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: > 95 %
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Other conditions affecting worker exposure

Indoor use

Body parts exposed:

Assumes that potential dermal contact is limited to hands.

Additional conditions human health

Covers skin contact area up to 960 cm²

1.2. CS7: Worker Contributing Scenario: Industrial (PROC8b)

Process Categories	Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)
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Product (article) characteristics

Vapour pressure:

< 5 hPa

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:

Exposure duration < 8 h

Frequency:

Covers exposure up to 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures

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

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Dermal - minimum efficiency of: > 95 %

Other conditions affecting worker exposure

Indoor use

Body parts exposed:

Assumes that potential dermal contact is limited to hands.

Additional conditions human health

Covers skin contact area up to 960 cm²

1.2. CS8: Worker Contributing Scenario: Industrial (PROC9)

Process Categories

Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

Product (article) characteristics

Vapour pressure:

< 5 hPa

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:

Exposure duration < 8 h

Frequency:

Covers exposure up to 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures

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

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Dermal - minimum efficiency of: > 95 %

Other conditions affecting worker exposure

Indoor use

Body parts exposed:

Assumes that potential dermal contact is limited to hands.

Additional conditions human health

Covers skin contact area up to 480 cm²

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario: Covered by (ERC7)

Release route	Release rate	Release estimation method
Air	1 %	N/A
Water	1 %	N/A

soil	1 %	N/A
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protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	0.13 mg/L	N/A	0.35
freshwater sediment	2.21 mg/kg bw/day	N/A	0.35
marine water	0.01 mg/L	N/A	0.35
marine sediment	0.22 mg/kg bw/day	N/A	0.35
soil	0.39 mg/kg bw/day	N/A	0.37
Sewage treatment plant	1.25 mg/L	N/A	0.02

1.3. CS2: Worker Contributing Scenario: Industrial (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.04 mg/m ³	N/A	0.003
dermal, systemic, long-term	0.02 mg/kg bw/day	N/A	0.01

1.3. CS3: Worker Contributing Scenario: Industrial (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	3.61 mg/m ³	N/A	0.26
dermal, systemic, long-term	0.04 mg/kg bw/day	N/A	0.02

1.3. CS4: Worker Contributing Scenario: Industrial (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	7.75 mg/m ³	N/A	0.54
dermal, systemic, long-term	0.02 mg/kg bw/day	N/A	0.01

1.3. CS5: Worker Contributing Scenario: Industrial (PROC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	5.41 mg/m ³	N/A	0.39
dermal, systemic, long-term	0.21 mg/kg bw/day	N/A	0.1

1.3. CS6: Worker Contributing Scenario: Industrial (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	6.49 mg/m ³	N/A	0.46
dermal, systemic, long-term	0.41 mg/kg bw/day	N/A	0.21

1.3. CS7: Worker Contributing Scenario: Industrial (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	5.41 mg/m ³	N/A	0.39
dermal, systemic, long-term	0.41 mg/kg bw/day	N/A	0.21

1.3. CS8: Worker Contributing Scenario: Industrial (PROC9)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	5.41 mg/m ³	N/A	0.39
dermal, systemic, long-term	0.21 mg/kg bw/day	N/A	0.1

1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

2. ES 2 Widespread use by professional workers

2.1 TITLE SECTION

Exposure Scenario name	Hydraulic (functional) fluids
Date - Version	25/07/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

Environment Contributing Scenario

CS1 Covered by	ERC9a - ERC9b
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Worker Contributing Scenario

CS2 General use from professional operators	PROC1
CS3 General use from professional operators	PROC2
CS4 General use from professional operators	PROC3
CS5 General use from professional operators	PROC8a
CS6 General use from professional operators	PROC9
CS7 General use from professional operators	PROC20

2.2 Conditions of use affecting exposure

2.2. CS1: Environment Contributing Scenario: Covered by (ERC9a, ERC9b)

Environmental release categories	Widespread use of functional fluid (indoor) - Widespread use of functional fluid (outdoor) (ERC9a, ERC9b)
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Amount used, frequency and duration of use (or from service life)

Amounts used:

Annual site tonnage 100 t(tonnes)/year

Maximum allowable site tonnage (MSafe): 21.8 kg/day

Release type: Continuous release

Emission days: 100 days per year

Conditions and measures related to sewage treatment plant

STP type:

Municipal Sewage Treatment Plant

Water - minimum efficiency of: = 87.5 %

STP effluent (m³/day): 2000

Conditions and measures related to treatment of waste (including article waste)

Waste treatment

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Other conditions affecting environmental exposure

Local marine water dilution factor: 100

Local freshwater dilution factor: 10

Receiving surface water flow: 18000 m³/day

2.2. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)
Product (article) characteristics	
Vapour pressure: < 5 hPa	
Concentration of substance in product: Covers percentage substance in the product up to 25 %.	
Additional conditions human health Covers skin contact area up to 240 cm ²	
Amount used, frequency and duration of use/exposure	
Duration: Exposure duration < 8 h	
Frequency: Use frequency 5 days per week	
Technical and organisational conditions and measures	
Technical and organisational measures Provide a good standard of controlled ventilation (5 to 10 air changes per hour).	
Other conditions affecting worker exposure	
Indoor use	
Body parts exposed: Palm of one hand	
2.2. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)	
Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)
Product (article) characteristics	
Vapour pressure: < 5 hPa	
Concentration of substance in product: Covers percentage substance in the product up to 25 %.	
Additional conditions human health Covers skin contact area up to 480 cm ²	
Amount used, frequency and duration of use/exposure	
Duration: Exposure duration < 8 h	
Frequency: Use frequency 5 days per week	
Technical and organisational conditions and measures	
Technical and organisational measures Provide a good standard of controlled ventilation (5 to 10 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection	
Wear suitable gloves tested to EN374.	DermaI - minimum efficiency of: 90 %
Other conditions affecting worker exposure	
Indoor use	
Body parts exposed:	

Assumes that potential dermal contact is limited to hands.

2.2. CS4: Worker Contributing Scenario: General use from professional operators (PROC3)

Process Categories

Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Product (article) characteristics

Vapour pressure:

< 5 hPa

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Additional conditions human health

Covers skin contact area up to 240 cm²

Amount used, frequency and duration of use/exposure

Duration:

Exposure duration < 8 h

Frequency:

Use frequency 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures

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

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Dermal - minimum efficiency of: 90 %

Other conditions affecting worker exposure

Indoor use

Body parts exposed:

Palm of one hand

2.2. CS5: Worker Contributing Scenario: General use from professional operators (PROC8a)

Process Categories

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)

Product (article) characteristics

Vapour pressure:

< 5 hPa

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Additional conditions human health

Covers skin contact area up to 960 cm²

Amount used, frequency and duration of use/exposure

Duration:

Exposure duration < 1 h

Frequency:

Use frequency 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures

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

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Dermal - minimum efficiency of: 90 %

Other conditions affecting worker exposure

Indoor use

Body parts exposed:

Assumes that potential dermal contact is limited to hands.

2.2. CS6: Worker Contributing Scenario: General use from professional operators (PROC9)

Process Categories

Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

Product (article) characteristics

Vapour pressure:

< 5 hPa

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Additional conditions human health

Covers skin contact area up to 480 cm²

Amount used, frequency and duration of use/exposure

Duration:

Exposure duration < 4 h

Frequency:

Use frequency 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures

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

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Dermal - minimum efficiency of: 90 %

Other conditions affecting worker exposure

Indoor use

Body parts exposed:

Assumes that potential dermal contact is limited to hands.

2.2. CS7: Worker Contributing Scenario: General use from professional operators (PROC20)

Process Categories

Use of functional fluids in small devices (PROC20)

Product (article) characteristics

Vapour pressure:

< 5 hPa

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Additional conditions human health

Covers skin contact area up to 480 cm²

Amount used, frequency and duration of use/exposure

Duration:

Exposure duration < 8 h

Frequency:

Use frequency 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures

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

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: 90 %
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Other conditions affecting worker exposure

Indoor use

Body parts exposed:

Assumes that potential dermal contact is limited to hands.

2.3 Exposure estimation and reference to its source

2.3. CS1: Environment Contributing Scenario: Covered by (ERC9a, ERC9b)

Release route	Release rate	Release estimation method
Air	1 %	N/A
Water	0.5 %	N/A
soil	0.1 %	N/A

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	0.0002 mg/L	N/A	0.0006
freshwater sediment	0.004 mg/kg bw/day	N/A	0.0006
marine water	2E-05 mg/L	N/A	0.0006
freshwater sediment	0.0004 mg/kg bw/day	N/A	0.0006
Agricultural soil	0.0002 mg/kg bw/day	N/A	0.0002
Sewage treatment plant	6E-05 mg/L	N/A	< 1E-06

2.3. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.04 mg/m ³	N/A	0.003
dermal, systemic, long-term	0.02 mg/kg bw/day	N/A	0.01

2.3. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	5.41 mg/m ³	N/A	0.39
dermal, systemic, long-term	0.08 mg/kg bw/day	N/A	0.04

2.3. CS4: Worker Contributing Scenario: General use from professional operators (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	7.57 mg/m ³	N/A	0.54
dermal, systemic, long-term	0.04 mg/kg bw/day	N/A	0.02

2.3. CS5: Worker Contributing Scenario: General use from professional operators (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	5.41 mg/m ³	N/A	0.39
dermal, systemic, long-term	0.82 mg/kg bw/day	N/A	0.41

2.3. CS6: Worker Contributing Scenario: General use from professional operators (PROC9)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	6.49 mg/m ³	N/A	0.46
dermal, systemic, long-term	0.41 mg/kg bw/day	N/A	0.21

2.3. CS7: Worker Contributing Scenario: General use from professional operators (PROC20)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	0.1 mg/kg bw/day	N/A	0.05

2.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.