ACIDE SULFURIQUE >51%

Code : 16564

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Les Pays-Bas:
Centre National d'Information toxicologique - Bilthoven :
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1. Identification de la substance/du mélange et de la société/l'entreprise

1.1. Identificateur de produit

* Description chimique : Acide sulfurique , Sulfate dihydrogène, solution (>51%).

Type de produit : Produit pur en solution .

* Numéro de régistration Reach : 01-2119458838-20

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

* Usage(s) identifié(s) : A ce jour, nous n'avons pas d'informations relatives aux usages identifiés. Ces informations seront ajoutées dès qu'elles seront disponibles.

* Usage(s) déconseillé(s) : A ce jour, nous n'avons pas d'informations relatives aux usages déconseillés. Ces informations seront ajoutées dès qu'elles seront disponibles.

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

Identification de la société : Voir en-tête de la fiche de données de sécurité.

1.4. Numéro d'appel d'urgence

Numéro de téléphone en cas d'urgence : Voir en-tête de la fiche de données de sécurité.

2. Identification des dangers

2.1. Classification de la substance ou du mélange

Classification selon la Directive 67/548/CEE ou 1999/45/CE

Corrosif (C; R35)

Classification selon le Règlement (CE) N° 1272/2008

* Corrosion cutanée - Catégorie 1A - Danger (Skin. Corr. 1A; H314)

2.2. Éléments d'étiquetage

Etiquetage conformément au Règlement (CE) n° 1272/2008

* • Composant(s) dangereux : Acide sulfurique ...%

* • Pictogramme(s) de danger

* • Mention d'avertissement : Danger

* • Mention de danger : H314 - Provoque des brûlures de la peau et des lésions oculaires graves.

* • Conseils de prudence

* - Prévention : P260 - Ne pas respirer les poussières, fumées, gaz, brouillards, vapeurs, aérosols.
P280 - Porter des gants de protection, des vêtements de protection, un équipement de protection des yeux, du visage.

2. Identification des dangers (suite)

* - Intervention : P301+P330+P331 - EN CAS D'INGESTION : Rincer la bouche. Ne PAS faire vomir. P303+P361+P353 - EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux) : Enlever immédiatement les vêtements contaminés. Rincer la peau à l'eau/se doucher. P305+P351+P338 - EN CAS DE CONTACT AVEC LES YEUX : Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer. P363 - Laver les vêtements contaminés avant réutilisation.

2.3. Autres dangers

* Dangers phyqisues/chimiques : Attaque des métaux avec dégagement d'hydrogène gazeux.

* Dangers sur la santé : Une concentration dangereuse pour la santé dans l'air sera pas ou très lentement atteinte lors de l'évaporation de cette substance à env. 20°C; par pulvérisation beaucoup plus rapide.

* Dangers pour l'environnement : Le produit cause une baisse considérable du valeur pH de l'eau et du sol.
Ce produit n'est pas une substance PBT ou vPvB, ou n'en contient pas (conformément à l'annexe XIII).

* Dangers pour la sécurité : Risque d'explosion par nombreuses réactions.

3. Composition/informations sur les composants

3.1. Substances

	Nom du composant(s)		% en poids	n° CAS	n° EINECS	n° index	n° Reach	CLASSIFICATION
*	Acide sulfurique...%	:	> 51 %	7664-93-9	231-639-5	016-020-00-8	01-2119458838-20	C; R35 --- Skin Corr. 1A+; H314

*

Le texte complet des phrases R et des mentions (EU)H se trouve à la section 16.

La note B (Règlement (CE) No 1272/2008) s'applique au produit ou à un ou plus de ses composants.

4. Premiers secours

4.1. Description des premiers secours

En Général : EN TOUT CAS CONSULTER UN MEDECIN.
Ne jamais administrer quelque chose par la bouche à une personne inconsciente.

Premiers secours

- Inhalation : Amener la victime à l'air frais.
Tenir le patient au calme dans une position demi-assise.
Si la victime ne respire plus ou de façon irrégulière, pratiquer la respiration artificielle.
Emmener le patient à l'hôpital.

- Contact avec la peau : Enlever les vêtements contaminés pendant le rinçage.
Rincer la peau immédiatement et abondamment à l'eau. (év. se doucher).
Appeler un médecin.

* - Contact avec les yeux : Rincer IMMEDIATEMENT, longuement et abondamment (au moins 15 min.) à l'eau.
Enlever les verres de contact.
Consulter un oculiste.
Continuer à rincer ou dégoutter l'oeil pendant le transport.
Ne pas utiliser un agent de neutralisation.

- Ingestion : NE PAS FAIRE VOMIR. Rincer la bouche à l'eau.
Faire boire beaucoup d'eau.
Emmener le patient IMMEDIATEMENT à l'hôpital.

4. Premiers secours (suite)

4.2. Principaux symptômes et effets, aigus et différés

* Voir section 11.

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

* Pour le conseil d'un spécialiste, les médecins doivent contacter le NVCI or le Centre Antipoison belge.

5. Mesures de lutte contre l'incendie

5.1. Moyens d'extinction

Moyens d'extinction

* - Adéquats : Poudre chimique sèche , Mousse résistant aux alcools , Dioxyde de carbone (CO_2) , Sable .

* - Inadéquats : Eau .

5.2. Dangers particuliers résultant de la substance ou du mélange

Risques particuliers : En cas d'incendie, des oxydes de soufre toxiques et corrosifs peuvent se dégager.

5.3. Conseils aux pompiers

* Mesures de protection en cas d'intervention : A proximité immédiate d'un feu, utiliser un appareil respiratoire autonome et porter des vêtements de protection adéquats.

Procédures spéciales : Refroidir les emballages et constructions proches par vaporisation d'eau. Eviter que les eaux usées de lutte contre l'incendie contaminent l'environnement. Neutraliser l'eau destinée à éteindre le feu avec des produits basiques.

6. Mesures à prendre en cas de dispersion accidentelle

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

Précautions individuelles : Evacuer immédiatement le personnel et aérer la zone.
Eviter toute inhalation de vapeurs et le contact avec la peau, les yeux et les vêtements. Porter l'équipement individuel de protection recommandé. (Voir section 8)

6.2. Précautions pour la protection de l'environnement

Précautions pour l'environnement : Obturer les fuites si possible, sans prendre de risque.
Endiguer le produit renversé le plus possible avec du matériel inerte.
Eviter l'évicuation du produit dans un cours d'eau, dans les égouts ou le sol.
Avertir les autorités si le liquide pénètre dans les égouts ou dans les eaux du domaine public.

6.3. Méthodes et matériel de confinement et de nettoyage

* Méthodes de nettoyage : Recueillir le produit renversé dans des récipients fermés et résistant à la corrosion.
Diluer immédiatement le liquide restant avec beaucoup d'eau et neutraliser à l'aide d'une base. (ex. Carbonate de soude)
Rincer abondamment à l'eau.

6.4. Référence à d'autres sections

* Pour l'équipement de protection, voir section 8.
Pour l'élimination des déchets, voir section 13.

7. Manipulation et stockage

7.1. Précautions à prendre pour une manipulation sans danger

* Manipulation : EVITER LE CONTACT AVEC TOUT !!
Eviter toute inhalation de vapeurs et le contact avec la peau, les yeux et les vêtements. Porter l'équipement individuel de protection recommandé. (Voir section 8)
Eviter le réchauffage, le giclement et la formation de vapeurs, lors de la vidange, du transvasement, de la dilution ou de la dissolution du produit.
En diluant, toujours verser la solution acide sur l'eau, jamais vice versa.
Ne pas manger, ne pas boire et ne pas fumer pendant l'utilisation.
Des rince-oeil et des douches de sécurité doivent être installés à proximité de toute source possible d'exposition.

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

* Stockage : Conserver uniquement dans le récipient d'origine bien fermé, dans un endroit frais, bien ventilé et sec.
Tous les produits dangereux devraient être placés sur un bac récepteur ou être entonnés.
Conserver à l'écart des : Bases , Agents réducteurs , Combustibles .
Température de conservation: 10-30 °C

* Matériaux d'emballage recommandés : Polyéthylène , Polypropylène , Verre .

* Matériaux d'emballage déconseillés : Certains métaux .

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

* Pour les usages identifiés, voir le sous-rubrique 1.2 et/ou les scénarios d'exposition.

8. Contrôles de l'exposition/protection individuelle

8.1. Paramètres de contrôle

* Limites d'exposition professionnelle : Acide sulfurique...% : Valeur limite (BE) : 1 mg/m³ (2009)
Acide sulfurique...% : Valeur courte durée (BE) : 3 mg/m³ (2009)
Acide sulfurique...% : Valeur limite (VME 8 h) (NL) : 0,05 mg/m³ (2011)

* Valeurs limites biologiques : Ces informations seront ajoutées dès qu'elles seront disponibles.

* DNELs : • Acide sulfurique...% : Travailleur, effets locaux aigus, inhalation : 0,1 mg/m³
• Acide sulfurique...% : Travailleur, effets locaux à long-terme, inhalation : 0,05 mg/m³

* PNECs : • Acide sulfurique...% : Sol : -
• Acide sulfurique...% : Rejet intermittent : -
• Acide sulfurique...% : Station de traitement des eaux usées : 8,8 mg/l
• Acide sulfurique...% : Sédiment marin : 0,002 mg/l
• Acide sulfurique...% : Sédiment d'eau douce : 0,002 mg/l
• Acide sulfurique...% : Eau de mer : 0,00025 mg/l
• Acide sulfurique...% : Eau douce : 0,0025 mg/l

8.2. Contrôles de l'exposition

* Mesures d'ordre technique : Aréation (Si possible, par le sol), Aspiration locale .

Equipements individuels de protection

* - Protection respiratoire : Masque respiratoire à gaz CE-agréé (Type de filtre E).

- Protection de la peau : Un vêtement de protection approprié (Résistant aux acides).

* - Protection des mains : Matériaux appropriés pour les gants de sécurité (EN 374):
Néoprène : temps de pénétration > 480' - épaisseur 1,5 mm

- Protection des yeux/du visage : Lunettes de sécurité fermées ou écran facial.

* Contrôles d'exposition liés à la protection de l'environnement : Voir sections 6, 7, 12 en 13.

9. Propriétés physiques et chimiques

9.1. Informations sur les propriétés physiques et chimiques essentielles

* Voir fiche technique pour des informations détaillées.

	Etat physique (20°C)	: Liquide .
	Aspect/Couleur	: Clair(e) , Incolore .
	Odeur	: Inodore .
*	Seuil olfactif	: Aucune donnée disponible.
*	Valeur pH	: Produit très acide .
	Point de fusion/congélation	: -20 jusqu'à 10 °C
*	Point/Intervalle d'ébullition (1013 hPa)	: 310 °C
	Point d'éclair	: Non applicable.
*	Vitesse d'évaporation	: Non applicable.
*	Danger d'incendie	: Non applicable.
	Limites d'explosivité en air	: Non applicable.
*	Pression de vapeur (20°C)	: 1,3 kPa
*	Densité de vapeur relative (air=1)	: 3,4
*	Densité relative du mélange saturé de vapeur/air (air=1)	: 1,0
	Densité (20°C)	: 1,40 - 1,84 kg/l
*	Soluble dans	: Ether diéthylique .
	Hydrosolubilité	: Entièrement soluble .
*	Log P octanol/eau (20°C)	: Non applicable.
*	Température d'auto-inflammation	: Non applicable.
*	Energie d'inflammation minimum	: Non applicable.
*	Température de décomposition	: Aucune donnée disponible.
*	Viscosité (20°C)	: 11 - 28 mPa.s (Dynamique)
*	Propriétés explosives	: Non applicable.
*	Propriétés comburantes	: Non applicable.

9.2. Autres informations

* Autres : Très hygroscopique .

10. Stabilité et réactivité

10.1. Réactivité

* Réactivité : Le produit est très oxydant et réagit violemment aux combustibles et agents réducteurs.
Réagit violemment avec les agents oxydants et les bases.
Réagit avec : Matériaux organiques , Solvants .

10.2. Stabilité chimique

* Stabilité : Instable lors du contact avec l'humidité .

10.3. Possibilité de réactions dangereuses

* Réactions dangereuses : Réaction exothermique avec Eau , Bases .
Le contact avec des substances métalliques peut libérer de l'hydrogène gazeux inflammable.

10.4. Conditions à éviter

10. Stabilité et réactivité (suite)

* Conditions à éviter : Températures élevées .

10.5. Matières incompatibles

* Matières à éviter : Agents oxydants , Bases , Agents réducteurs , Combustibles , Matériaux organiques , Solvants .

10.6. Produits de décomposition dangereux

Produits de décomposition dangereux : En cas d'incendie, des oxydes de soufre toxiques et corrosifs peuvent se dégager.

11. Informations toxicologiques

11.1. Informations sur les effets toxicologiques

Toxicité aiguë

* - Inhalation : Très corrosif pour les voies respiratoires .
L'inhalation peut causer une pneumonie et/ou un œdème pulmonaire, mais seulement après que des signes d'effets corrosifs sur les muqueuses des yeux et/ou des voies respiratoires supérieures. .
Exposition à long terme peut causer des dommages de poumon. .
Symptômes: Gorge douloureuse , Toux , Essoufflement , Suffocation .
• Acide sulfurique...% : CL50 (Rat, inhalation, 2 h) : > 500 mg/l

- Contact avec la peau : Corrosif pour la peau .
Symptômes: Douleur , Rougeur , Brûlures graves .

* - Contact avec les yeux : Corrosif pour les yeux .
Symptômes: Rougeur , Douleur , Mauvaise vue , Lésions oculaires graves .

* - Ingestion : Corrosif pour la bouche, la gorge et le système digestif .
L'érosion des dents peut se produire .
Symptômes: Nausées , Maux de ventre , Vomissement , Diarrhée .
• Acide sulfurique...% : DL50 (Rat, admin. orale) : > 2000 mg/kg

* Corrosion cutanée/irritation cutanée : Lapin : Très corrosif .

* Lésions oculaires graves/irritation oculaire : Lapin : Très corrosif .

* Danger par aspiration : Le produit peut affecter les voies respiratoires supérieures et inférieures, ce qui provoque des infections et une fonction pulmonaire réduite.

* Sensibilisation respiratoire ou cutanée : Probablement pas sensible .

* Effets cancérogènes : Non repris comme carcinogène .
IARC : Goupe 1 (cancérogène pour l'homme)
Les Pays-Bas : Des vapeurs d'acide sulfurique sont incluses dans la liste de SZW.

* Effets mutagènes : Non repris comme mutagène .

* Toxicité vis-à-vis de la reproduction : Non repris pour toxicité de reproduction .

* Toxicité spécifique pour certains organes cibles - exposition unique : Chez l'homme : Non repris pour toxicité pour certains organes .
Chez les animaux : Pas d'effets connus.

* Toxicité spécifique pour certains organes cibles - exposition répétée : Chez l'homme : Non repris pour toxicité pour certains organes .
Chez les animaux : Pas d'effets connus.

12. Informations écologiques

12.1. Toxicité

* Ecotoxicité : • Acide sulfurique...% : CE50 (Daphnia magna, 24 h) : > 25 mg/l
• Acide sulfurique...% : CL50 (Poisson, 96 h) : 16 mg/l

12.2. Persistance et dégradabilité

12. Informations écologiques (suite)

Persistance et dégradabilité : • Acide sulfurique...% : Persistance et dégradabilité : Anorganique .

12.3. Potentiel de bio-accumulation

* Bioaccumulation : • Acide sulfurique...% : Bioaccumulation : Pas de bio-accumulation .

12.4. Mobilité dans le sol

Mobilité : • Acide sulfurique...% : Mobilité : Complètement soluble dans l'eau .

12.5. Résultats des évaluations PBT et vPvB

* Evaluation : • Acide sulfurique...% : PBT/vPvB : Non

12.6. Autres effets néfastes

Classe WGK (DE) : 1 (Produit polluant légèrement l'eau) .

Charge de l'eau (NL) : 9

Effert d'assainissement (NL) : B

* Potentiel de formation d'ozone photochimique : Aucune donnée disponible.

* Potentiel photochimique d'appauvrissement de la couche d'ozone : Aucun(e) .

* Potentiel de perturbation du système endocrinien : Aucune donnée disponible.

* Potentiel de réchauffement global : Aucune donnée disponible.

13. Considérations relatives à l'élimination

13.1. Méthodes de traitement des déchets

Traitement des déchets et résidus : Le produit doit être éliminé suivant les lois nationales ou locales, par une firme agréée de traitement de déchets dangereux.

* Liste européenne des déchets : XXXXXX - Code européen de déchets. Ce code est assigné sur la base des applications les plus courantes et ne peut pas être représentatif pour les pollutions qui sont surgies à l'utilisation efficace du produit. Le producteur de la perte doit évaluer son processus lui-même et doit accorder le codage de rebut approprié. Voir la Décision 2001/118/CE .

Traitement des emballages souillés : L'utilisation de l'emballage est uniquement prévue pour l'emballage de ce produit. Après utilisation, l'emballage sera vidé entièrement et refermé. Quand il s'agit d'emballage consigné, l'emballage vide sera repris par le fournisseur.

14. Informations relatives au transport

14.1. Numéro ONU

N° UN : 1830

14.2. Nom d'expédition des Nations unies

* Nom ADR : UN 1830 Acide sulfurique, 8, II, (E)

* Nom ADN : UN 1830 Acide sulfurique , 8, II

Nom IMDG : UN 1830 Sulphuric acid , 8, II

14.3. Classe(s) de danger pour le transport

Classe : 8

14.4. Groupe d'emballage

14. Informations relatives au transport (suite)

Groupe d'emballage : II

14.5. Dangers pour l'environnement

* Danger pour l'environnement : Non

Pollutant marin : Non

14.6. Précautions particulières à prendre par l'utilisateur

Indication du danger : 80

Symbole(s) de danger : 8

N° EmS : F-A, S-B

14.7. Transport en vrac conformément à l'annexe II de la convention Marpol 73/78 et au recueil IBC

* Type de navire requis : Aucune donnée disponible.

* Catégorie de pollution : Aucune donnée disponible.

15. Informations réglementaires

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

* Inventaires : Inventaire de l'Australie (AICS): Figurant dans l'inventaire.
Inventaire du Canada (DSL): Figurant dans l'inventaire.
Inventaire de Chine (IECS): Figurant dans l'inventaire.
Inventaire européen (EINECS): Figurant dans l'inventaire.
Inventaire de la Corée (KECI): Figurant dans l'inventaire.
Inventaire des Etats-Unis (TSCA): Figurant dans l'inventaire.

N° NFPA : 3-0-2

* Règle(s) UE applicable(s) : Directive 98/24/CE du Conseil du 7 avril 1998 concernant la protection de la santé et de la sécurité des travailleurs contre les risques liés à des agents chimiques sur le lieu de travail
Décision 2001/118/CE de la Commission du 16 janvier 2001 modifiant la Décision 2000/532/CE en ce qui concerne la liste de déchets
Règlement (CE) No 1272/2008 du Parlement européen et du Conseil du 16 décembre 2008 relatif à la classification, à l'étiquetage et à l'emballage des substances et des mélanges, modifiant et abrogeant les Directives 67/548/CEE et 1999/45/CE et modifiant le Règlement (CE) no 1907/2006
Règlement (UE) n° 453/2010 de la Commission du 20 mai 2010 modifiant le Règlement (CE) n° 1907/2006 du Parlement européen et du Conseil concernant l'enregistrement, l'évaluation et l'autorisation des substances chimiques, ainsi que les restrictions applicables à ces substances (Reach)

15.2. Évaluation de la sécurité chimique

* Une évaluation de sécurité chimique a été effectuée pour la substance ou les substances qui compose(nt) ce produit ou pour le produit lui-même.

16. Autres informations

* Cette fiche de sécurité a été établie conformément au Règlement (UE) n° 453/2010.
Cette fiche de sécurité est exclusivement faite pour usage industriel/professionnel.

* Modification par rapport à la révision précédente.

Modifications : Révision générale .

16. Autres informations (suite)

*	Sources des données utilisées	:	Les indications données ici sont basées sur l'état actuel de nos connaissances (Producteurs des matières premières , Cartes chimiques , ...). Voyez aussi sur l'adresse d'Internet: http://apps.echa.europa.eu/registered/registered-sub.aspx#search
	Phrases R	:	R35 - Provoque de graves brûlures.
*	Mentions (EU)H	:	H314 - Provoque des brûlures de la peau et des lésions oculaires graves.
*	Liste des abréviations et acronymes	:	ADN (Accord européen relatif au transport international des marchandises Dangereuses par voie de Navigation intérieur) ADR (Accord européen relatif au transport international des marchandises Dangereuses par Route) DNEL (Derived No Effect Level) : un niveau d'exposition estimé sécurité EmS (Emergency Schedule) : le premier code fait référence à l'annexe relative aux incendies et le deuxième code renvoie au barème de déversement pertinentes IARC (International Agency for Research on Cancer) : Centre international de Recherche sur le Cancer (CIRC) IMDG (International Maritime Dangerous Goods code) : code international relatif au transport des marchandises dangereuses par mer NFPA (National Fire Protection Association) ou diamant du feu NVCI : Centre National d'Information toxicologique PBT : persistante, bioaccumulable et toxique PNEC (Predicted No Effect Concentration) : concentration en deçà duquel l'exposition à une substance sans effet REACH : Enregistrement, Evaluation et Autorisation des produits Chimiques Liste de la SZW : Liste de substances et de processus cancérogènes comme visée à l'article 4.11 du décret de conditions de travail. VME (Valeur Moyenne d'Exposition) : l'exposition moyenne durant une période spécifique WGK (Wassergefahrdungsklasse) : une classification allemande des substances qui indiquent le risque d'environnement pour l'eau de surface vPvB : très persistante et très bioaccumulable

L'information donnée ci-dessus est, à notre connaissance, juste et complète à la date de publication de cette fiche de données de sécurité. Elle ne s'applique qu'au produit mentionné et ne donne aucune garantie pour la qualité et l'exhaustivité des caractéristiques du produit, ainsi que dans le cas d'autres procédés industriels ou de mélanges. L'utilisateur du produit est responsable de s'assurer que les informations sont d'application et complètes en ce qui concerne l'usage spécial qu'il fait du produit.
BRENNTAG n'accepte aucune responsabilité pour dommage ou perte qui résulterait de l'utilisation de ces données.

Fin du document

No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environmental Release Category (ERC)	Article Category (AC)	Specified
1	Manufacture of substance	3	NA	NA	1, 2, 3, 4, 8a, 8b, 9	1	NA	ES529
2	Use as an intermediate	3	4, 6b, 8, 9, 14	19	1, 2, 3, 4, 8a, 8b, 9	6a	NA	ES679
3	Formulation & (re)packing of substances and mixtures	3	10	NA	1, 3, 5, 8a, 8b, 9	2	NA	ES689
4	Use in Cleaning Agents	22	NA	35	8a	8a	NA	ES904
5	Use in laboratories	22	NA	21	15	8a, 8b	NA	ES906
6	Use for extractions and processing of minerals, ores	3	2a, 14	20, 40	2, 3, 4	4, 6b	NA	ES784
7	Use as processing aid	3	4, 5, 6b, 8, 9, 11, 23	20	1, 2, 3, 4, 8a, 8b, 9, 13	6b	NA	ES782
8	Use in electrolytic processes	3	14, 15, 17	14, 20	1, 2, 8b, 9, 13	5, 6b	NA	ES788
9	Use in the process of surface treatments, purification and etching	3	2a, 14, 15, 16	14, 15	1, 2, 3, 4, 8a, 8b, 9, 13	6b	NA	ES786
10	Use in gas treatment	3	8	20	1, 2, 8b	7	NA	ES790
11	Use in production of sulphuric acid contained batteries	3	NA	NA	2, 3, 4, 9	2, 5	NA	ES792
12	Use in recycling of sulphuric acid contained batteries	3	NA	NA	2, 4, 5, 8a	1	NA	ES794
13	Use in maintenance of sulphuric acid contained batteries	22	NA	NA	19	8b, 9b	NA	ES798
14	Use of sulphuric acid contained batteries	21	NA	NA	NA	9b	3	ES1117

1. Short title of Exposure Scenario 1: Manufacture of substance		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	
Environmental Release Categories	ERC1: Manufacture of substances	
2.1 Contributing scenario controlling environmental exposure for: ERC1		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 25% - 100%
Amount used	Annual amount per site	1,2 Million tonnes/year
	Annual amount used per region	19 Million tonnes/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Exhaust gases may be treated by scrubbers or emissions may be measured and controlled according to local legislation
	Water	The wastewater neutralisation process is extremely efficient with almost total neutralisation achieved
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	On-site waste water treatment
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Sludge Treatment	Incineration or in a landfill
2.2 Contributing scenario controlling worker exposure for:PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 25% - 100%

	Physical Form (at time of use)	liquid
	Vapour pressure	0,06 hPa
Amount used	Worker exposure considered to be negligible due to the specialized systems and closed nature of the production process	
Frequency and duration of use	Frequency of use	220 days/year
	Exposure duration per day	480 min
	Intermittent contact is expected	
Human factors not influenced by risk management	Breathing volume	10 m3/day
	Exposed skin surface	480 cm²
	Please note that due to the corrosive nature of the substance dermal exposure is not considered relevant for risk characterization as it must be prevented in all cases	
Other operational conditions affecting workers exposure	Outdoors not close to buildings(PROC1, PROC2, PROC8a, PROC8b)	
	Outdoors near to buildings(PROC3, PROC4)	
	Indoors, any sized room, with good natural ventilation(PROC9)	
	Process may involve high temperature (50 - 150℃)(P ROC1, PROC2, PROC3, PROC4)	
	Room size and ventilation rate are not relevant as workers work in a control room, with no direct contact to the installations housing the material.	
	Due to the nature of the substance the process should be kept as contained as possible	
Technical conditions and measures to control dispersion from source towards the worker	Use vapour recovery system(except PROC8a)	
	Provide local exhaust ventilation (LEV).(PROC1, PROC3, PROC8b)	
	Complete segregation(PROC1, PROC2)	
Organisational measures to prevent /limit releases, dispersion and exposure	Only properly trained and authorised personal shall handle the substance	
	Substance-handling procedures shall be well documented and strictly supervised	
	Workers involved in sampling and transfer of materials to road tankers are trained in the procedures and protective equipment is intended to cope with the worst case scenario, in order to minimize exposure and risks	
Conditions and measures related to personal protection, hygiene and health evaluation	Workers wear protective clothing (face/eye protection, helmet, anti-acid gloves, boots and protective coverall)	

3. Exposure estimation and reference to its source

Environment

EUSES V2.1 tier 2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC1	---	Fresh water	PEC	0,011µg/L	0,00440
ERC1	---	Marine water	PEC	0,0016µg/L	0,00640
ERC1	---	Fresh water sediment	PEC	0,97ng/kg	0,00049
ERC1	---	Marine sediment	PEC	0,14ng/kg	0,00007

ERC1	---	Soil	PEC	0,05µg/kg	---
ERC1	---	Air	PEC	0,18ng/m3	---

Workers

Advanced REACH Tool (ART model)

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	90th percentile value	worker inhalation, long term - systemic	0,0094ng/m3	---
PROC2	90th percentile value	worker inhalation, long term - systemic	0,092ng/m3	---
PROC3	90th percentile value	worker inhalation, long term - systemic	0,42µg/m³	---
PROC4	90th percentile value	worker inhalation, long term - systemic	14µg/m³	---
PROC8a	90th percentile value	worker inhalation, long term - systemic	23µg/m³	---
PROC8b	90th percentile value	worker inhalation, long term - systemic	0,0048µg/m³	---
PROC9	90th percentile value	worker inhalation, long term - systemic	2,8µg/m³	---

The ECETOC exposure estimation is considered to be unsatisfactory and is not considered relevant for the risk characterisation purposes

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

1. Short title of Exposure Scenario 2: Use as an intermediate		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Sectors of end-use	SU4: Manufacture of food products SU6b: Manufacture of pulp, paper and paper products SU8: Manufacture of bulk, large scale chemicals (including petroleum products) SU9: Manufacture of fine chemicals SU14: Manufacture of basic metals, including alloys	
Chemical product category	PC19: Intermediate	
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	
Environmental Release Categories	ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)	
2.1 Contributing scenario controlling environmental exposure for: ERC6a		
Product characteristics	Concentration of the Substance in Mixture/Article	The substance is used up in the process
Amount used	Annual amount per site	300.000 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Exhaust gases may be treated by scrubbers or emissions may be measured and controlled according to local legislation
	Water	The wastewater neutralisation process is extremely efficient with almost total neutralisation achieved
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	On-site waste water treatment
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Sludge Treatment	Incineration or in a landfill
2.2 Contributing scenario controlling worker exposure for:PROC1, PROC2, PROC3, PROC4,		

PROC8a, PROC8b, PROC9		
Product characteristics	Concentration of the Substance in Mixture/Article	The substance is used up in the process
	Physical Form (at time of use)	liquid
	Vapour pressure	0,06 hPa
Amount used	Worker contact is generally very low as most operations are remotely controlled and sampling/analysis events are of short duration.	
Frequency and duration of use	Frequency of use	220 days/year
	Exposure duration per day	480 min
	Intermittent contact is expected	
Human factors not influenced by risk management	Breathing volume	10 m3/day
	Exposed skin surface	480 cm²
	Please note that due to the corrosive nature of the substance dermal exposure is not considered relevant for risk characterization as it must be prevented in all cases	
Other operational conditions affecting workers exposure	Outdoors not close to buildings(PROC1, PROC2, PROC8a, PROC8b)	
	Outdoors near to buildings(PROC3, PROC4)	
	Indoors, any sized room, with good natural ventilation(PROC9)	
	Process may involve high temperature (50 - 150℃)(P ROC1, PROC2, PROC3, PROC4)	
	Room size and ventilation rate are not relevant as workers work in a control room, with no direct contact to the installations housing the material.	
	Due to the nature of the substance the process should be kept as contained as possible	
Technical conditions and measures to control dispersion from source towards the worker	Use vapour recovery system(except PROC8a)	
	Provide local exhaust ventilation (LEV).(PROC1, PROC3, PROC8b)	
	Complete segregation(PROC1, PROC2)	
Organisational measures to prevent /limit releases, dispersion and exposure	Only properly trained and authorised personal shall handle the substance	
	Substance-handling procedures shall be well documented and strictly supervised	
	Workers involved in sampling and transfer of materials to road tankers are trained in the procedures and protective equipment is intended to cope with the worst case scenario, in order to minimize exposure and risks	
Conditions and measures related to personal protection, hygiene and health evaluation	Workers wear protective clothing (face/eye protection, helmet, anti-acid gloves, boots and protective coverall)	

3. Exposure estimation and reference to its source

Environment

EUSES V2.1 tier 2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC6a	---	Fresh water	PEC	0,2µg/L	0,08

ERC6a	---	Marine water	PEC	0,03µg/L	0,12
ERC6a	---	Fresh water sediment	PEC	0,0018µg/kg	0,0009
ERC6a	---	Marine sediment	PEC	0,0026µg/kg	0,0013
ERC6a	---	Soil	PEC	0,92µg/kg	---
ERC6a	---	Air	PEC	0,0032µg/m³	---

Workers

Advanced REACH Tool (ART model)

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	90th percentile value	worker inhalation, long term - systemic	0,0094ng/m3	---
PROC2	90th percentile value	worker inhalation, long term - systemic	0,092ng/m3	---
PROC3	90th percentile value	worker inhalation, long term - systemic	0,42µg/m³	---
PROC4	90th percentile value	worker inhalation, long term - systemic	14µg/m³	---
PROC8a	90th percentile value	worker inhalation, long term - systemic	23µg/m³	---
PROC8b	90th percentile value	worker inhalation, long term - systemic	0,0048µg/m³	---
PROC9	90th percentile value	worker inhalation, long term - systemic	2,8µg/m³	---

The ECETOC exposure estimation is considered to be unsatisfactory and is not considered relevant for the risk characterisation purposes

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

1. Short title of Exposure Scenario 3: Formulation & (re)packing of substances and mixtures		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Sectors of end-use	SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)	
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC3: Use in closed batch process (synthesis or formulation) PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	
Environmental Release Categories	ERC2: Formulation of preparations	
2.1 Contributing scenario controlling environmental exposure for: ERC2		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 98%
Amount used	Annual amount per site	300.000 ton(s)/year
	Annual amount used per region	3 Million tonnes/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Exhaust gases may be treated by scrubbers or emissions may be measured and controlled according to local legislation
	Water	The wastewater neutralisation process is extremely efficient with almost total neutralisation achieved
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	On-site waste water treatment
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Sludge Treatment	Incineration or in a landfill
2.2 Contributing scenario controlling worker exposure for:PROC1, PROC3, PROC5, PROC8a, PROC8b, PROC9		
Product characteristics	Concentration of the Substance in	Concentration of substance in product: 98%

	Mixture/Article	
	Physical Form (at time of use)	liquid
	Vapour pressure	0,06 hPa
Amount used	Worker exposure considered to be negligible due to the specialized systems.	
Frequency and duration of use	Frequency of use	220 days/year
	Exposure duration per day	480 min
	Intermittent contact is expected	
Human factors not influenced by risk management	Breathing volume	10 m3/day
	Exposed skin surface	480 cm²
	Please note that due to the corrosive nature of the substance dermal exposure is not considered relevant for risk characterization as it must be prevented in all cases	
Other operational conditions affecting workers exposure	Outdoors not close to buildings(PROC1, PROC8a, PROC8b)	
	Outdoors near to buildings(PROC3)	
	Indoors, any sized room, with good natural ventilation(PROC5, PROC9)	
	Process may involve high temperature (50 - 150℃)(P ROC1, PROC3)	
	Room size and ventilation rate are not relevant as workers work in a control room, with no direct contact to the installations housing the material.	
	Due to the nature of the substance the process should be kept as contained as possible	
Technical conditions and measures to control dispersion from source towards the worker	Use vapour recovery system(except PROC5)	
	Provide local exhaust ventilation (LEV).(PROC1, PROC3, PROC5, PROC8b)	
	Complete segregation(PROC1)	
Organisational measures to prevent /limit releases, dispersion and exposure	Only properly trained and authorised personal shall handle the substance	
	Substance-handling procedures shall be well documented and strictly supervised	
	Workers involved in sampling and transfer of materials to road tankers are trained in the procedures and protective equipment is intended to cope with the worst case scenario, in order to minimize exposure and risks	
Conditions and measures related to personal protection, hygiene and health evaluation	Workers wear protective clothing (face/eye protection, helmet, anti-acid gloves, boots and protective coverall)	

3. Exposure estimation and reference to its source

Environment

EUSES V2.1 tier 2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC2	---	Fresh water	PEC	0,0443µg/L	0,01772
ERC2	---	Marine water	PEC	0,0064µg/L	0,02568
ERC2	---	Fresh water sediment	PEC	0,0038µg/kg	0,00192
ERC2	---	Marine sediment	PEC	0,0005µg/kg	0,00028
ERC2	---	Soil	PEC	0,2µg/kg	---

ERC2	---	Air	PEC	0,0007µg/m³	---

Workers

Advanced REACH Tool (ART model)

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	90th percentile value	worker inhalation, long term - systemic	0,0009ng/m3	---
PROC3	90th percentile value	worker inhalation, long term - systemic	0,42µg/m³	---
PROC5	90th percentile value	worker inhalation, long term - systemic	0,016mg/m³	---
PROC8a	90th percentile value	worker inhalation, long term - systemic	0,023mg/m³	---
PROC8b	90th percentile value	worker inhalation, long term - systemic	0,0004µg/m³	---
PROC9	90th percentile value	worker inhalation, long term - systemic	0,0028mg/m³	---

The ECETOC exposure estimation is considered to be unsatisfactory and is not considered relevant for the risk characterisation purposes

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

1. Short title of Exposure Scenario 4: Use in Cleaning Agents		
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)	
Chemical product category	PC35: Washing and cleaning products (including solvent based products)	
Process categories	PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities	
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems	
2.1 Contributing scenario controlling environmental exposure for: ERC8a		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 98%
Amount used	Annual amount per site	1 kg
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Sludge Treatment	None (emissions to drains)
Conditions and measures related to external treatment of waste for disposal	Waste treatment	Amount of substance in waste resulting from service life of articles:, Not applicable.
	Waste treatment	Release fraction to air from waste handling:, Not applicable.
	Waste treatment	Release fraction to wastewater from waste handling:, Not applicable.
	Waste treatment	Fraction disposed of as secondary waste:, Not applicable.
2.2 Contributing scenario controlling worker exposure for:PROC8a		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 98%
	Physical Form (at time of use)	liquid
	Vapour pressure	0,06 hPa
Frequency and duration of use	Frequency of use	220 days/year
	Exposure duration per day	480 min
	Intermittent contact is expected	
Human factors not influenced by risk management	Breathing volume	10 m3/day
	Exposed skin surface	480 cm²

	Please note that due to the corrosive nature of the substance dermal exposure is not considered relevant for risk characterization as it must be prevented in all cases
Other operational conditions affecting workers exposure	Indoors, any sized room, with good natural ventilation
	Due to the nature of the substance the process should be kept as contained as possible
Technical conditions and measures to control dispersion from source towards the worker	LEV not required
Organisational measures to prevent /limit releases, dispersion and exposure	Only properly trained and authorised personal shall handle the substance
	Substance-handling procedures shall be well documented and strictly supervised
Conditions and measures related to personal protection, hygiene and health evaluation	Only basic skin protection is required
	Workers wear protective clothing (face/eye protection, helmet, anti-acid gloves, boots and protective coverall)

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Workers

The ECETOC exposure estimation is considered to be unsatisfactory and is not considered relevant for the risk characterisation purposes

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

1. Short title of Exposure Scenario 5: Use in laboratories		
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)	
Chemical product category	PC21: Laboratory chemicals	
Process categories	PROC15: Use as laboratory reagent	
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems	
2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 98%
Amount used	Annual amount per site	5.000 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Sludge Treatment	Incineration or in a landfill
2.2 Contributing scenario controlling worker exposure for:PROC15		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 98%
	Physical Form (at time of use)	liquid
	Vapour pressure	0,06 hPa
Amount used	Worker exposure considered to be negligible due to the specialized systems.	
Frequency and duration of use	Frequency of use	220 days/year
	Exposure duration per day	480 min
	Intermittent contact is expected	
Human factors not influenced by risk management	Breathing volume	10 m3/day
	Exposed skin surface	480 cm²
	Please note that due to the corrosive nature of the substance dermal exposure is not considered relevant for risk characterization as it must be prevented in all cases	
Other operational conditions affecting workers exposure	Indoors, any sized room, with good natural ventilation	
	Due to the nature of the substance the process should be kept as contained as possible	
Organisational measures to prevent /limit releases, dispersion	Only properly trained and authorised personal shall handle the substance	
	Substance-handling procedures shall be well documented and strictly	

and exposure	supervised
	Workers involved in sampling and transfer of materials to road tankers are trained in the procedures and protective equipment is intended to cope with the worst case scenario, in order to minimize exposure and risks
Conditions and measures related to personal protection, hygiene and health evaluation	Workers wear protective clothing (face/eye protection, helmet, anti-acid gloves, boots and protective coverall)

3. Exposure estimation and reference to its source

Environment

EUSES V2.1 tier 2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a	---	Fresh water	PEC	0,138µg/L	0,05520
ERC8a	---	Marine water	PEC	0,0074µg/L	0,02956
ERC8a	---	Fresh water sediment	PEC	0,011µg/kg	0,00580
ERC8a	---	Marine sediment	PEC	0,639ng/kg	0,00032
ERC8a	---	Soil	PEC	0,134µg/kg	---
ERC8a	---	Air	PEC	0,48ng/m3	---
ERC8b	---	Fresh water	PEC	2,12ng/L	0,00085
ERC8b	---	Marine water	PEC	0,0666ng/L	0,00026
ERC8b	---	Fresh water sediment	PEC	0,183ng/kg	0,00009
ERC8b	---	Marine sediment	PEC	0,0058ng/kg	0,00000
ERC8b	---	Soil	PEC	0,134ng/kg	---
ERC8b	---	Air	PEC	0,0048ng/m3	---

Workers

Advanced REACH Tool (ART model)

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC15	90th percentile value	worker inhalation, long term - systemic	0,023µg/m³	---

The ECETOC exposure estimation is considered to be unsatisfactory and is not considered relevant for the risk characterisation purposes

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should

ensure that risks are managed to at least equivalent levels.

1. Short title of Exposure Scenario 6: Use for extractions and processing of minerals, ores		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Sectors of end-use	SU2a: Mining (without offshore industries) SU14: Manufacture of basic metals, including alloys	
Chemical product category	PC20: Products such as ph-regulators, flocculants, precipitants, neutralization agents PC40: Extraction agents	
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises	
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC6b: Industrial use of reactive processing aids	
2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC6b		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 98%
Amount used	Annual amount per site	438 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Sludge Treatment	Metal recovery, incineration or landfill
2.2 Contributing scenario controlling worker exposure for:PROC2, PROC3, PROC4		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 98%
	Physical Form (at time of use)	liquid
	Vapour pressure	0,06 hPa
Amount used	Worker contact is generally very low as most operations are remotely controlled and sampling/analysis events are of short duration.	
Frequency and duration of use	Frequency of use	220 days/year
	Exposure duration per day	480 min
	Intermittent contact is expected	
Human factors not influenced by risk management	Breathing volume	10 m3/day

	Exposed skin surface	480 cm²
	Please note that due to the corrosive nature of the substance dermal exposure is not considered relevant for risk characterization as it must be prevented in all cases	
Other operational conditions affecting workers exposure	Outdoors not close to buildings(PROC2)	
	Outdoors near to buildings(PROC3, PROC4)	
	Process may involve high temperature (50 - 150℃)	
	Room size and ventilation rate are not relevant as workers work in a control room, with no direct contact to the installations housing the material.	
	Due to the nature of the substance the process should be kept as contained as possible	
Technical conditions and measures to control dispersion from source towards the worker	Use vapour recovery system(PROC2, PROC4)	
	Provide local exhaust ventilation (LEV).(PROC2)	
	Complete segregation(PROC2)	
Organisational measures to prevent /limit releases, dispersion and exposure	Only properly trained and authorised personal shall handle the substance	
	Substance-handling procedures shall be well documented and strictly supervised	
	Workers involved in sampling and transfer of materials to road tankers are trained in the procedures and protective equipment is intended to cope with the worst case scenario, in order to minimize exposure and risks	
Conditions and measures related to personal protection, hygiene and health evaluation	Workers wear protective clothing (face/eye protection, helmet, anti-acid gloves, boots and protective coverall)	

3. Exposure estimation and reference to its source

Environment

EUSES V2.1 tier 2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4	---	Fresh water	PEC	0,025µg/L	0,01000
ERC4	---	Marine water	PEC	0,0036µg/L	0,01424
ERC4	---	Fresh water sediment	PEC	0,0021µg/kg	0,00106
ERC4	---	Marine sediment	PEC	0,0003µg/kg	0,00015
ERC4	---	Soil	PEC	0,112µg/kg	---
ERC4	---	Air	PEC	0,0004µg/m³	---
ERC6b	---	Fresh water	PEC	0,026ng/L	0,00001
ERC6b	---	Marine water	PEC	0,0037ng/L	0,00001
ERC6b	---	Fresh water sediment	PEC	0,0000µg/kg	0,00000
ERC6b	---	Marine sediment	PEC	0,0000µg/kg	0,00000
ERC6b	---	Soil	PEC	0,0001µg/kg	---
ERC6b	---	Air	PEC	0,0000µg/m³	---

Workers

Advanced REACH Tool (ART model)				
Contributing Scenario	**Specific conditions**	**Exposure routes**	**Level of Exposure**	**RCR**
PROC2	90th percentile value	worker inhalation, long term - systemic	0,092ng/m3	---
PROC3	90th percentile value	worker inhalation, long term - systemic	0,42µg/m³	---
PROC4	90th percentile value	worker inhalation, long term - systemic	0,014mg/m³	---
The ECETOC exposure estimation is considered to be unsatisfactory and is not considered relevant for the risk characterisation purposes				

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

1. Short title of Exposure Scenario 7: Use as processing aid	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU4: Manufacture of food products SU5: Manufacture of textiles, leather, fur SU6b: Manufacture of pulp, paper and paper products SU8: Manufacture of bulk, large scale chemicals (including petroleum products) SU9: Manufacture of fine chemicals SU11: Manufacture of rubber products SU23: Electricity, steam, gas water supply and sewage treatment
Chemical product category	PC20: Products such as ph-regulators, flocculants, precipitants, neutralization agents
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC13: Treatment of articles by dipping and pouring
Environmental Release Categories	ERC6b: Industrial use of reactive processing aids

2.1 Contributing scenario controlling environmental exposure for: ERC6b		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 98%
Amount used	Annual amount per site	100.000 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Exhaust gases may be treated by scrubbers or emissions may be measured and controlled according to local legislation
	Water	The wastewater neutralisation process is extremely efficient with almost total neutralisation achieved
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	On-site waste water treatment
	Flow rate of sewage	2.000 m3/d

	treatment plant effluent	
	Sludge Treatment	Incineration or in a landfill
2.2 Contributing scenario controlling worker exposure for:PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC13		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 98%
	Physical Form (at time of use)	liquid
	Vapour pressure	0,06 hPa
Amount used	Worker contact is generally very low as most operations are remotely controlled and sampling/analysis events are of short duration.	
Frequency and duration of use	Frequency of use	220 days/year
	Exposure duration per day	480 min
	Intermittent contact is expected	
Human factors not influenced by risk management	Breathing volume	10 m3/day
	Exposed skin surface	480 cm²
	Please note that due to the corrosive nature of the substance dermal exposure is not considered relevant for risk characterization as it must be prevented in all cases	
Other operational conditions affecting workers exposure	Outdoors not close to buildings(PROC1, PROC2, PROC8a, PROC8b)	
	Outdoors near to buildings(PROC3, PROC4)	
	Indoors, any sized room, with good natural ventilation(PROC9, PROC13)	
	Process may involve high temperature (50 - 150℃)(P ROC1, PROC2, PROC3, PROC4)	
	Room size and ventilation rate are not relevant as workers work in a control room, with no direct contact to the installations housing the material.	
	Due to the nature of the substance the process should be kept as contained as possible	
Technical conditions and measures to control dispersion from source towards the worker	Use vapour recovery system(except PROC8a, PROC13)	
	Provide local exhaust ventilation (LEV).(PROC1, PROC2, PROC3, PROC8b)	
	Complete segregation(PROC1, PROC2)	
Organisational measures to prevent /limit releases, dispersion and exposure	Only properly trained and authorised personal shall handle the substance	
	Substance-handling procedures shall be well documented and strictly supervised	
	Workers involved in sampling and transfer of materials to road tankers are trained in the procedures and protective equipment is intended to cope with the worst case scenario, in order to minimize exposure and risks	
Conditions and measures related to personal protection, hygiene and health evaluation	Workers wear protective clothing (face/eye protection, helmet, anti-acid gloves, boots and protective coverall)	

3. Exposure estimation and reference to its source

Environment

EUSES V2.1 tier 2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC6b	---	Fresh water	PEC	0,0059µg/L	0,00236
ERC6b	---	Marine water	PEC	0,0009µg/L	0,00344
ERC6b	---	Fresh water sediment	PEC	0,0005µg/kg	0,00026
ERC6b	---	Marine sediment	PEC	0,074ng/kg	0,00004
ERC6b	---	Soil	PEC	0,027µg/kg	---
ERC6b	---	Air	PEC	0,0000µg/m³	---

Workers

Advanced REACH Tool (ART model)

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	90th percentile value	worker inhalation, long term - systemic	0,0094ng/m3	---
PROC2	90th percentile value	worker inhalation, long term - systemic	0,092ng/m3	---
PROC3	90th percentile value	worker inhalation, long term - systemic	0,42µg/m³	---
PROC4	90th percentile value	worker inhalation, long term - systemic	0,014mg/m³	---
PROC8a	90th percentile value	worker inhalation, long term - systemic	0,023mg/m³	---
PROC8b	90th percentile value	worker inhalation, long term - systemic	0,0048µg/m³	---
PROC9	90th percentile value	worker inhalation, long term - systemic	0,0028mg/m³	---
PROC13	90th percentile value	worker inhalation, long term - systemic	0,016mg/m³	---

The ECETOC exposure estimation is considered to be unsatisfactory and is not considered relevant for the risk characterisation purposes

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

1. Short title of Exposure Scenario 8: Use in electrolytic processes		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Sectors of end-use	SU14: Manufacture of basic metals, including alloys SU15: Manufacture of fabricated metal products, except machinery and equipment SU17: General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment	
Chemical product category	PC14: Metal surface treatment products, including galvanic and electroplating products PC20: Products such as ph-regulators, flocculants, precipitants, neutralization agents	
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC13: Treatment of articles by dipping and pouring	
Environmental Release Categories	ERC5: Industrial use resulting in inclusion into or onto a matrix ERC6b: Industrial use of reactive processing aids	
2.1 Contributing scenario controlling environmental exposure for: ERC5, ERC6b		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 95-98%
Amount used	Annual amount per site	2.306 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Sludge Treatment	Metal recovery, incineration or landfill
2.2 Contributing scenario controlling worker exposure for:PROC1, PROC2, PROC8b, PROC9, PROC13		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 95-98%
	Physical Form (at time of use)	liquid
	Vapour pressure	0,06 hPa
Amount used	Worker exposure should be low and controlled	

Frequency and duration of use	Frequency of use	220 days/year
	Exposure duration per day	480 min
	Intermittent contact is expected	
Human factors not influenced by risk management	Breathing volume	10 m3/day
	Exposed skin surface	480 cm²
	Please note that due to the corrosive nature of the substance dermal exposure is not considered relevant for risk characterization as it must be prevented in all cases	
Other operational conditions affecting workers exposure	Outdoors not close to buildings(PROC1, PROC2, PROC8a, PROC8b)	
	Indoors, any sized room, with good natural ventilation(PROC9, PROC13)	
	Process may involve high temperature (50 - 150℃)(P ROC1, PROC2)	
	Room size and ventilation rate are not relevant as workers work in a control room, with no direct contact to the installations housing the material.	
	Due to the nature of the substance the process should be kept as contained as possible	
Technical conditions and measures to control dispersion from source towards the worker	Use vapour recovery system(except PROC13)	
	Provide local exhaust ventilation (LEV).(PROC1, PROC8b)	
	Complete segregation(PROC1, PROC2)	
Organisational measures to prevent /limit releases, dispersion and exposure	Only properly trained and authorised personal shall handle the substance	
	Substance-handling procedures shall be well documented and strictly supervised	
	Workers involved in sampling and transfer of materials to road tankers are trained in the procedures and protective equipment is intended to cope with the worst case scenario, in order to minimize exposure and risks	
Conditions and measures related to personal protection, hygiene and health evaluation	Workers wear protective clothing (face/eye protection, helmet, anti-acid gloves, boots and protective coverall)	
	Wear respiratory protection (Efficiency: 90 %)(PROC13)	

3. Exposure estimation and reference to its source

Environment

EUSES V2.1 tier 2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC5	---	Fresh water	PEC	0,0681µg/L	0,02724
ERC5	---	Marine water	PEC	0,0099µg/L	0,03948
ERC5	---	Fresh water sediment	PEC	0,0059µg/kg	0,00294
ERC5	---	Marine sediment	PEC	0,0008µg/kg	0,00043
ERC5	---	Soil	PEC	0,309µg/kg	---
ERC5	---	Air	PEC	0,0011µg/m³	---
ERC6b	---	Fresh water	PEC	0,136ng/L	0,00005
ERC6b	---	Marine water	PEC	0,0197ng/L	0,00008
ERC6b	---	Fresh water sediment	PEC	0,0118ng/kg	0,00001
ERC6b	---	Marine sediment	PEC	0,0017ng/kg	0,00000

ERC6b	---	Soil	PEC	0,618ng/kg	---
ERC6b	---	Air	PEC	0,0022ng/m3	---

Workers

Advanced REACH Tool (ART model)

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	90th percentile value	worker inhalation, long term - systemic	0,0094ng/m3	---
PROC2	90th percentile value	worker inhalation, long term - systemic	0,092ng/m3	---
PROC8b	90th percentile value	worker inhalation, long term - systemic	0,0048µg/m³	---
PROC9	90th percentile value	worker inhalation, long term - systemic	0,0028mg/m³	---
PROC13	90th percentile value	worker inhalation, long term - systemic	0,47mg/m³	---

The ECETOC exposure estimation is considered to be unsatisfactory and is not considered relevant for the risk characterisation purposes

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

1. Short title of Exposure Scenario 9: Use in the process of surface treatments, purification and etching	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU2a: Mining (without offshore industries) SU14: Manufacture of basic metals, including alloys SU15: Manufacture of fabricated metal products, except machinery and equipment SU16: Manufacture of computer, electronic and optical products, electrical equipment
Chemical product category	PC14: Metal surface treatment products, including galvanic and electroplating products PC15: Non-metal-surface treatment products
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC13: Treatment of articles by dipping and pouring
Environmental Release Categories	ERC6b: Industrial use of reactive processing aids

2.1 Contributing scenario controlling environmental exposure for: ERC6b		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 98%
Amount used	Annual amount per site	10.000 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Sludge Treatment	Incineration or in a landfill

2.2 Contributing scenario controlling worker exposure for:PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC13		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 98%

	Physical Form (at time of use)	liquid
	Vapour pressure	0,06 hPa
Amount used	Worker exposure considered to be negligible due to the specialized systems and closed nature of the production process	
Frequency and duration of use	Frequency of use	220 days/year
	Exposure duration per day	480 min
	Intermittent contact is expected	
Human factors not influenced by risk management	Breathing volume	10 m3/day
	Exposed skin surface	480 cm²
	Please note that due to the corrosive nature of the substance dermal exposure is not considered relevant for risk characterization as it must be prevented in all cases	
Other operational conditions affecting workers exposure	Outdoors not close to buildings(PROC1, PROC2, PROC8a, PROC8b)	
	Outdoors near to buildings(PROC3, PROC4)	
	Indoors, any sized room, with good natural ventilation(PROC9, PROC13)	
	Process may involve high temperature (50 - 150℃)(P ROC1, PROC2, PROC3, PROC4)	
	Room size and ventilation rate are not relevant as workers work in a control room, with no direct contact to the installations housing the material.	
	Due to the nature of the substance the process should be kept as contained as possible	
Technical conditions and measures to control dispersion from source towards the worker	Use vapour recovery system(except PROC8a, PROC13)	
	Provide local exhaust ventilation (LEV).(PROC1, PROC2, PROC3, PROC8b)	
	Complete segregation(PROC1, PROC2)	
Organisational measures to prevent /limit releases, dispersion and exposure	Only properly trained and authorised personal shall handle the substance	
	Substance-handling procedures shall be well documented and strictly supervised	
	Workers involved in sampling and transfer of materials to road tankers are trained in the procedures and protective equipment is intended to cope with the worst case scenario, in order to minimize exposure and risks	
Conditions and measures related to personal protection, hygiene and health evaluation	Workers wear protective clothing (face/eye protection, helmet, anti-acid gloves, boots and protective coverall)	

3. Exposure estimation and reference to its source

Environment

EUSES V2.1 tier 2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC6b	---	Fresh water	PEC	0,591ng/L	0,00024
ERC6b	---	Marine water	PEC	0,0856ng/L	0,00034
ERC6b	---	Fresh water sediment	PEC	0,051ng/kg	0,00003
ERC6b	---	Marine sediment	PEC	0,0074ng/kg	0,00000

ERC6b	---	Soil	PEC	2,68ng/kg	---
ERC6b	---	Air	PEC	0,0096ng/m3	---

Workers

Advanced REACH Tool (ART model)

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	90th percentile value	worker inhalation, long term - systemic	0,0094ng/m3	---
PROC2	90th percentile value	worker inhalation, long term - systemic	0,0920ng/m3	---
PROC3	90th percentile value	worker inhalation, long term - systemic	0,42µg/m³	---
PROC4	90th percentile value	worker inhalation, long term - systemic	0,014mg/m³	---
PROC8a	90th percentile value	worker inhalation, long term - systemic	0,023mg/m³	---
PROC8b	90th percentile value	worker inhalation, long term - systemic	0,0048µg/m³	---
PROC9	90th percentile value	worker inhalation, long term - systemic	0,0028mg/m³	---
PROC13	90th percentile value	worker inhalation, long term - systemic	0,016mg/m³	---

The ECETOC exposure estimation is considered to be unsatisfactory and is not considered relevant for the risk characterisation purposes

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

1. Short title of Exposure Scenario 10: Use in gas treatment		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Sectors of end-use	SU8: Manufacture of bulk, large scale chemicals (including petroleum products)	
Chemical product category	PC20: Products such as ph-regulators, flocculants, precipitants, neutralization agents	
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	
Environmental Release Categories	ERC7: Industrial use of substances in closed systems	
2.1 Contributing scenario controlling environmental exposure for: ERC7		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 98%
Amount used	Annual amount per site	30.000 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Water	Spent acid solutions are neutralized to circumneutral pH prior to discharge
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Sludge Treatment	Incineration or in a landfill
2.2 Contributing scenario controlling worker exposure for:PROC1, PROC2, PROC8b		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 98%
	Physical Form (at time of use)	liquid
	Vapour pressure	0,06 hPa
Amount used	Worker exposure should be low and controlled	
Frequency and duration of use	Frequency of use	220 days/year

	Exposure duration per day	480 min
	Intermittent contact is expected	
Human factors not influenced by risk management	Breathing volume	10 m3/day
	Exposed skin surface	480 cm²
	Please note that due to the corrosive nature of the substance dermal exposure is not considered relevant for risk characterization as it must be prevented in all cases	
Other operational conditions affecting workers exposure	Outdoors not close to buildings	
	Process may involve high temperature (50 - 150℃)	
	Room size and ventilation rate are not relevant as workers work in a control room, with no direct contact to the installations housing the material.	
	Due to the nature of the substance the process should be kept as contained as possible	
Technical conditions and measures to control dispersion from source towards the worker	Use vapour recovery system	
	Provide local exhaust ventilation (LEV).(PROC1, PROC8b)	
	Complete segregation(PROC1, PROC2)	
Organisational measures to prevent /limit releases, dispersion and exposure	Only properly trained and authorised personal shall handle the substance	
	Substance-handling procedures shall be well documented and strictly supervised	
	Workers involved in sampling and transfer of materials to road tankers are trained in the procedures and protective equipment is intended to cope with the worst case scenario, in order to minimize exposure and risks	
Conditions and measures related to personal protection, hygiene and health evaluation	Workers wear protective clothing (face/eye protection, helmet, anti-acid gloves, boots and protective coverall)	

3. Exposure estimation and reference to its source

Environment

EUSES V2.1 tier 2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC7	---	Fresh water	PEC	0,0886µg/L	0,03544
ERC7	---	Marine water	PEC	0,0128µg/L	0,05120
ERC7	---	Fresh water sediment	PEC	0,0076µg/kg	0,00383
ERC7	---	Marine sediment	PEC	0,0011µg/kg	0,00056
ERC7	---	Soil	PEC	0,0029mg/kg	---
ERC7	---	Air	PEC	0,0014µg/m³	---

Workers

Advanced REACH Tool (ART model)

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	90th percentile value	worker inhalation, long term - systemic	0,0094ng/m3	---

PROC2	90th percentile value	worker inhalation, long term - systemic	0,092ng/m3	---
PROC8b	90th percentile value	worker inhalation, long term - systemic	0,0048µg/m³	---

The ECETOC exposure estimation is considered to be unsatisfactory and is not considered relevant for the risk characterisation purposes

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

1. Short title of Exposure Scenario 11: Use in production of sulphuric acid contained batteries		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	
Environmental Release Categories	ERC2: Formulation of preparations ERC5: Industrial use resulting in inclusion into or onto a matrix	
2.1 Contributing scenario controlling environmental exposure for: ERC2, ERC5		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 98%
Amount used	Annual amount per site	2.500 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Sludge Treatment	Incineration or in a landfill
2.2 Contributing scenario controlling worker exposure for:PROC2, PROC3, PROC4, PROC9		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 98%
	Physical Form (at time of use)	liquid
	Vapour pressure	0,06 hPa
Amount used	Worker exposure should be low and controlled	
Frequency and duration of use	Frequency of use	220 days/year
	Exposure duration per day	480 min
	Intermittent contact is expected	
Human factors not influenced by risk management	Breathing volume	10 m3/day
	Exposed skin surface	480 cm²
	Please note that due to the corrosive nature of the substance dermal exposure is not considered relevant for risk characterization as it must be prevented in all cases	
Other operational conditions affecting workers exposure	Indoors, any sized room, with good natural ventilation	

	Room size and ventilation rate are not relevant as workers work in a control room, with no direct contact to the installations housing the material.
	Due to the nature of the substance the process should be kept as contained as possible
Organisational measures to prevent /limit releases, dispersion and exposure	Only properly trained and authorised personal shall handle the substance
	Substance-handling procedures shall be well documented and strictly supervised
	Workers involved in sampling and transfer of materials to road tankers are trained in the procedures and protective equipment is intended to cope with the worst case scenario, in order to minimize exposure and risks
Conditions and measures related to personal protection, hygiene and health evaluation	Workers wear protective clothing (face/eye protection, helmet, anti-acid gloves, boots and protective coverall)

3. Exposure estimation and reference to its source

Environment

EUSES V2.1 tier 2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC2	---	Fresh water	PEC	0,0369µg/L	0,01476
ERC2	---	Marine water	PEC	0,0054µg/L	0,02144
ERC2	---	Fresh water sediment	PEC	0,0032µg/kg	0,00160
ERC2	---	Marine sediment	PEC	0,0005µg/kg	0,00023
ERC2	---	Soil	PEC	0,166µg/kg	---
ERC2	---	Air	PEC	0,0006µg/m³	---
ERC5	---	Fresh water	PEC	0,0788µg/L	0,03152
ERC5	---	Marine water	PEC	0,0107µg/L	0,04280
ERC5	---	Fresh water sediment	PEC	0,0064µg/kg	0,00319
ERC5	---	Marine sediment	PEC	0,0009µg/kg	0,00046
ERC5	---	Soil	PEC	0,335µg/kg	---
ERC5	---	Air	PEC	0,0012µg/m³	---

Workers

Advanced REACH Tool (ART model)

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC2	90th percentile value	worker inhalation, long term - systemic	1,4µg/m³	---
PROC3	90th percentile value	worker inhalation, long term - systemic	0,014mg/m³	---
PROC4	90th percentile value	worker inhalation, long term - systemic	0,0012mg/m³	---
PROC9	90th percentile	worker inhalation, long	0,0012mg/m³	---

	value	term - systemic		

The ECETOC exposure estimation is considered to be unsatisfactory and is not considered relevant for the risk characterisation purposes

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

1. Short title of Exposure Scenario 12: Use in recycling of sulphuric acid contained batteries		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities	
Environmental Release Categories	ERC1: Manufacture of substances	
2.1 Contributing scenario controlling environmental exposure for: ERC1		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 25% - 40%
Amount used	Annual amount per site	2.500 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Sludge Treatment	Incineration or in a landfill
2.2 Contributing scenario controlling worker exposure for:PROC2, PROC4, PROC5, PROC8a		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 25% - 40%
	Physical Form (at time of use)	liquid
	Vapour pressure	0,06 hPa
Amount used	Worker exposure considered to be negligible due to the specialized systems.	
Frequency and duration of use	Frequency of use	220 days/year
	Exposure duration per day	480 min
	Intermittent contact is expected	
Human factors not influenced by risk management	Breathing volume	10 m3/day
	Exposed skin surface	480 cm²
	Please note that due to the corrosive nature of the substance dermal exposure is not considered relevant for risk characterization as it must be prevented in all cases	

Other operational conditions affecting workers exposure	Indoors, any sized room, with good natural ventilation
	Room size and ventilation rate are not relevant as workers work in a control room, with no direct contact to the installations housing the material.
	Due to the nature of the substance the process should be kept as contained as possible
Technical conditions and measures to control dispersion from source towards the worker	Provide local exhaust ventilation (LEV).
Organisational measures to prevent /limit releases, dispersion and exposure	Only properly trained and authorised personal shall handle the substance
	Substance-handling procedures shall be well documented and strictly supervised
	Workers involved in sampling and transfer of materials to road tankers are trained in the procedures and protective equipment is intended to cope with the worst case scenario, in order to minimize exposure and risks
Conditions and measures related to personal protection, hygiene and health evaluation	Workers wear protective clothing (face/eye protection, helmet, anti-acid gloves, boots and protective coverall)

3. Exposure estimation and reference to its source

Environment

EUSES V2.1 tier 2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC1	---	Fresh water	PEC	0,0074µg/L	0,00295
ERC1	---	Marine water	PEC	0,0011µg/L	0,00428
ERC1	---	Fresh water sediment	PEC	0,0638ng/kg	0,00032
ERC1	---	Marine sediment	PEC	0,0093ng/kg	0,00005
ERC1	---	Soil	PEC	0,0335µg/kg	---
ERC1	---	Air	PEC	0,0001µg/m³	---

Workers

Advanced REACH Tool (ART model)

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC2	90th percentile value	worker inhalation, long term - systemic	0,0012mg/m³	---
PROC4	90th percentile value	worker inhalation, long term - systemic	0,004mg/m³	---
PROC5	90th percentile value	worker inhalation, long term - systemic	0,013mg/m³	---
PROC8a	90th percentile value	worker inhalation, long term - systemic	0,006mg/m³	---

The ECETOC exposure estimation is considered to be unsatisfactory and is not considered relevant for the risk characterisation purposes

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the

Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

1. Short title of Exposure Scenario 13: Use in maintenance of sulphuric acid contained batteries		
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)	
Process categories	PROC19: Hand-mixing with intimate contact and only PPE available	
Environmental Release Categories	ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC9b: Wide dispersive outdoor use of substances in closed systems	
2.1 Contributing scenario controlling environmental exposure for: ERC8b, ERC9b		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 25% - 40%
Amount used	Annual amount per site	2.500 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Sludge Treatment	Incineration or in a landfill
2.2 Contributing scenario controlling worker exposure for:PROC19		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 25% - 40%
	Physical Form (at time of use)	liquid
	Vapour pressure	2,14 hPa
Amount used	Worker exposure considered to be negligible due to the specialized systems.	
Frequency and duration of use	Frequency of use	220 days/year
	Exposure duration per day	480 min
	Intermittent contact is expected	
Human factors not influenced by risk management	Breathing volume	10 m3/day
	Exposed skin surface	480 cm²
	Please note that due to the corrosive nature of the substance dermal exposure is not considered relevant for risk characterization as it must be prevented in all cases	
Other operational conditions affecting workers exposure	Indoors, any sized room, with good natural ventilation	
	Due to the nature of the substance the process should be kept as contained as possible	
Organisational measures to prevent /limit releases, dispersion and exposure	Only properly trained and authorised personal shall handle the substance	
	Substance-handling procedures shall be well documented and strictly supervised	

	Workers involved in sampling and transfer of materials to road tankers are trained in the procedures and protective equipment is intended to cope with the worst case scenario, in order to minimize exposure and risks
Conditions and measures related to personal protection, hygiene and health evaluation	Workers wear protective clothing (face/eye protection, helmet, anti-acid gloves, boots and protective coverall)

3. Exposure estimation and reference to its source

Environment

EUSES V2.1 tier 2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8b	---	Fresh water	PEC	0,001µg/L	0,00424
ERC8b	---	Marine water	PEC	0,333ng/L	0,00133
ERC8b	---	Fresh water sediment	PEC	0,914ng/kg	0,00046
ERC8b	---	Marine sediment	PEC	0,0288ng/kg	0,00001
ERC8b	---	Soil	PEC	0,671ng/kg	---
ERC8b	---	Air	PEC	0,002ng/m3	---
ERC9b	---	Fresh water	PEC	0,003µg/L	0,01340
ERC9b	---	Marine water	PEC	1,85ng/L	0,00740
ERC9b	---	Fresh water sediment	PEC	2,89ng/kg	0,00140
ERC9b	---	Marine sediment	PEC	0,16ng/kg	0,00008
ERC9b	---	Soil	PEC	0,003µg/kg	---
ERC9b	---	Air	PEC	0,12ng/m3	---

Workers

Advanced REACH Tool (ART model)

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
---	90th percentile value	worker inhalation, long term - systemic	0,002mg/m³	---

The ECETOC exposure estimation is considered to be unsatisfactory and is not considered relevant for the risk characterisation purposes

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

1. Short title of Exposure Scenario 14: Use of sulphuric acid contained batteries		
Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)	
Article categories	AC3: Electrical batteries and accumulators	
Environmental Release Categories	ERC9b: Wide dispersive outdoor use of substances in closed systems	
2.1 Contributing scenario controlling environmental exposure for: ERC9b		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 25% - 40%
Amount used	Annual amount per site	2.500 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Sludge Treatment	Incineration or in a landfill
2.2 Contributing scenario controlling consumer exposure for: AC3		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 25% - 40%
	Physical Form (at time of use)	liquid
	Vapour pressure	< 0,1 hPa
Frequency and duration of use	Exposure duration per day	240 min
Human factors not influenced by risk management	Breathing volume	10 m3/day
	Exposed skin surface	480 cm²
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Batteries should only be opened in a well-ventilated place
	Consumer Measures	Batteries should not be opened unnecessarily
	Consumer Measures	Batteries should stand on firm ground to prevent spill
	Consumer Measures	Wear suitable coveralls to prevent exposure to the skin.
	Consumer Measures	Wear acid-resistant gloves
	Consumer Measures	Wear protective eye glasses for protection against liquid splashes.
3. Exposure estimation and reference to its source		

Environment

EUSES V2.1 tier 2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC9b	---	Fresh water	PEC	0,0335µg/L	0,0134
ERC9b	---	Marine water	PEC	0,0018µg/L	0,0074
ERC9b	---	Fresh water sediment	PEC	2,89ng/kg	0,0014
ERC9b	---	Marine sediment	PEC	0,16ng/kg	0,0001
ERC9b	---	Soil	PEC	33,5ng/kg	---
ERC9b	---	Air	PEC	0,12ng/m3	---

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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SYSTÈMES DE QUALITÉ		
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ISO 14001	Oui	Oui
ISO 22000	-	Oui
FSSC 22000	-	Oui
GMP+ -feed	Oui	Oui
OHSAS18001	-	Oui
ESAD	Oui	Oui
autres	-	AEO