

FICHA DE DATOS DE SEGURIDAD

(de acuerdo con el Reglamento (UE) 2015/830)

445A2T-TIOCIANATO SODICO

Versión: 13

Fecha de revisión: 05/12/2017

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SECCIÓN 1: IDENTIFICACIÓN DE LA SUSTANCIA Y DE LA SOCIEDAD O LA EMPRESA.

1.1 Identificador del producto.

Nombre del producto: TIOCIANATO SODICO
Código del producto: 445A2T
Nombre químico: tiocianato de sodio
N. CAS: 540-72-7
N. CE: 208-754-4
N. registro: 01-2119543700-47-XXXX

1.2 Usos pertinentes identificados de la sustancia y usos desaconsejados.

Genérico industrial

Usos desaconsejados:

Usos distintos a los aconsejados.

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

Empresa: **Barcelonesa de Drogas y Productos Químicos, S.A.**
Dirección: Crom, 14 - P.I. FAMADES
Población: 08940 - Cornellà del Llobregat
Provincia: Barcelona
Teléfono: 93 377 02 08
Fax: 93 377 42 49
E-mail: barcelonesa@barcelonesa.com
Web: www.grupbarcelonesa.com

1.4 Teléfono de emergencia: 704100087 (Disponible 24h)

SECCIÓN 2: IDENTIFICACIÓN DE LOS PELIGROS.

2.1 Clasificación de la sustancia.

Según el Reglamento (EU) No 1272/2008:

Acute Tox. 4 : Nocivo en contacto con la piel o si se inhala.

Acute Tox. 4 : Nocivo en caso de inhalación.

Acute Tox. 4 : Nocivo en caso de ingestión, contacto con la piel o inhalación.

Aquatic Chronic 3 : Nocivo para los organismos acuáticos, con efectos nocivos duraderos.

Eye Irrit. 2 : Provoca irritación ocular grave.

2.2 Elementos de la etiqueta.

Etiquetado conforme al Reglamento (EU) No 1272/2008:

Pictogramas:



Palabra de advertencia:

Atención

Frases H:

H302+H312+H332 Nocivo en caso de ingestión, contacto con la piel o inhalación.
H319 Provoca irritación ocular grave.
H412 Nocivo para los organismos acuáticos, con efectos nocivos duraderos.

Frases P:

P261 Evitar respirar el polvo/el humo/el gas/la niebla/los vapores/el aerosol.
P273 Evitar su liberación al medio ambiente.
P280 Llevar guantes/prendas/gafas/máscara de protección.

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P312	Llamar a un CENTRO DE TOXICOLOGÍA/médico/... si la persona se encuentra mal.
P321	Se necesita un tratamiento específico (ver ... en esta etiqueta).
P337+P313	Si persiste la irritación ocular: Consultar a un médico.
P501	Eliminar el contenido/el recipiente en ...

Contiene:
tiocianato de sodio

2.3 Otros peligros.

En condiciones de uso normal y en su forma original, el producto no tiene ningún otro efecto negativo para la salud y el medio ambiente.

SECCIÓN 3: COMPOSICIÓN/INFORMACIÓN SOBRE LOS COMPONENTES.

3.1 Sustancias.

Nombre químico:	tiocianato de sodio
N. CAS:	540-72-7
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N. registro:	01-2119543700-47-XXXX

3.2 Mezclas.

No Aplicable.

SECCIÓN 4: PRIMEROS AUXILIOS.

4.1 Descripción de los primeros auxilios.

En los casos de duda, o cuando persistan los síntomas de malestar, solicitar atención médica. No administrar nunca nada por vía oral a personas que se encuentren inconscientes.

Inhalación.

Situar al accidentado al aire libre, mantenerle caliente y en reposo, si la respiración es irregular o se detiene, practicar respiración artificial. No administrar nada por la boca. Si está inconsciente, ponerle en una posición adecuada y buscar ayuda médica. Es recomendable para las personas que dispensan los primeros auxilios el uso de equipos de protección individual (ver sección 8).

Contacto con los ojos.

Retirar las lentes de contacto, si lleva y resulta fácil de hacer. Lavar abundantemente los ojos con agua limpia y fresca durante, por lo menos, 10 minutos, tirando hacia arriba de los párpados y buscar asistencia médica. No permita que la persona se frote el ojo afectado.

Contacto con la piel.

Quitar la ropa contaminada. Lavar la piel vigorosamente con agua y jabón o un limpiador de piel adecuado. NUNCA utilizar disolventes o diluyentes. Es recomendable para las personas que dispensan los primeros auxilios el uso de equipos de protección individual (ver sección 8).

Ingestión.

Si accidentalmente se ha ingerido, buscar inmediatamente atención médica. Mantenerle en reposo. NUNCA provocar el vómito.

4.2 Principales síntomas y efectos, agudos y retardados.

Producto Irritante, el contacto repetido o prolongado con la piel o las mucosas puede causar enrojecimiento, ampollas o dermatitis, la inhalación de niebla de pulverización o partículas en suspensión puede causar irritación de las vías respiratorias, algunos de los síntomas pueden no ser inmediatos.

Producto Nocivo, una exposición prolongada por inhalación puede causar efectos anestésicos y la necesidad de asistencia médica inmediata.

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

En los casos de duda, o cuando persistan los síntomas de malestar, solicitar atención médica. No administrar nunca nada por vía oral a personas que se encuentren inconscientes. No inducir el vómito. Si la persona vomita, despeje las vías respiratorias.

SECCIÓN 5: MEDIDAS DE LUCHA CONTRA INCENDIOS.

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El producto no presenta ningún riesgo particular en caso de incendio.

5.1 Medios de extinción.

Medios de extinción apropiados:

Polvo extintor o CO₂. En caso de incendios más graves también espuma resistente al alcohol y agua pulverizada.

Medios de extinción no apropiados:

No usar para la extinción chorro directo de agua. En presencia de tensión eléctrica no es aceptable utilizar agua o espuma como medio de extinción.

5.2 Peligros específicos derivados de la sustancia.

Riesgos especiales.

El fuego puede producir un espeso humo negro. Como consecuencia de la descomposición térmica, pueden formarse productos peligrosos: monóxido de carbono, dióxido de carbono. La exposición a los productos de combustión o descomposición puede ser perjudicial para la salud.

5.3 Recomendaciones para el personal de lucha contra incendios.

Refrigerar con agua los tanques, cisternas o recipientes próximos a la fuente de calor o fuego. Tener en cuenta la dirección del viento. Evitar que los productos utilizados en la lucha contra incendio pasen a desagües, alcantarillas o cursos de agua. Los restos de producto y medios de extinción pueden contaminar el medio ambiente acuático.

Equipo de protección contra incendios.

Según la magnitud del incendio, puede ser necesario el uso de trajes de protección contra el calor, equipo respiratorio autónomo, guantes, gafas protectoras o máscaras faciales y botas.

SECCIÓN 6: MEDIDAS EN CASO DE VERTIDO ACCIDENTAL.

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

Para control de exposición y medidas de protección individual, ver sección 8.

6.2 Precauciones relativas al medio ambiente.

Producto peligroso para el medio ambiente, en caso de producirse grandes vertidos o si el producto contamina lagos, ríos o alcantarillas, informar a las autoridades competentes, según la legislación local. Evitar la contaminación de desagües, aguas superficiales o subterráneas, así como del suelo.

6.3 Métodos y material de contención y de limpieza.

La zona contaminada debe limpiarse inmediatamente con un descontaminante adecuado. Echar el descontaminante a los restos y dejarlo durante varios días hasta que no se produzca reacción, en un envase sin cerrar.

6.4 Referencia a otras secciones.

Para control de exposición y medidas de protección individual, ver sección 8.
Para la eliminación de los residuos, seguir las recomendaciones de la sección 13.

SECCIÓN 7: MANIPULACIÓN Y ALMACENAMIENTO.

7.1 Precauciones para una manipulación segura.

Para la protección personal, ver sección 8. No emplear nunca presión para vaciar los envases, no son recipientes resistentes a la presión.

En la zona de aplicación debe estar prohibido fumar, comer y beber.

Cumplir con la legislación sobre seguridad e higiene en el trabajo.

Conservar el producto en envases de un material idéntico al original.

7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades.

Almacenar según la legislación local. Observar las indicaciones de la etiqueta. Almacenar los envases entre 5 y 35 °C, en un lugar seco y bien ventilado, lejos de fuentes de calor y de la luz solar directa. Mantener lejos de puntos de ignición. Mantener lejos de agentes oxidantes y de materiales fuertemente ácidos o alcalinos. No fumar. Evitar la entrada a personas no autorizadas. Una vez abiertos los envases, han de volverse a cerrar cuidadosamente y colocarlos verticalmente para evitar derrames.

El producto no se encuentra afectado por la Directiva 2012/18/UE (SEVESO III).

7.3 Usos específicos finales.

No disponible.

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SECCIÓN 8: CONTROLES DE EXPOSICIÓN/PROTECCIÓN INDIVIDUAL.

8.1 Parámetros de control.

El producto NO contiene sustancias con Valores Límite Ambientales de Exposición Profesional. El producto NO contiene sustancias con Valores Límite Biológicos.

Niveles de concentración DNEL/DMEL:

Nombre	DNEL/DMEL	Tipo	Valor
tiocianato de sodio N. CAS: 540-72-7 N. CE: 208-754-4	DNEL (Trabajadores)	Cutánea, Crónico, Efectos sistémicos	1,7 (mg/kg bw/day)
	DNEL (Consumidores)	Inhalación, Crónico, Efectos sistémicos	1,1 (mg/m3)
	DNEL (Consumidores)	Cutánea, Crónico, Efectos sistémicos	1,2 (mg/kg)
	DNEL (Consumidores)	Oral, Crónico, Efectos sistémicos	0,3 (mg/kg bw/day)

DNEL: Derived No Effect Level, (nivel sin efecto obtenido) nivel de exposición a la sustancia por debajo del cual no se prevén efectos adversos.

DMEL: Derived Minimal Effect Level, nivel de exposición que corresponde a un riesgo bajo, que debe considerarse un riesgo mínimo tolerable.

Niveles de concentración PNEC:

Nombre	Detalles	Valor
tiocianato de sodio N. CAS: 540-72-7 N. CE: 208-754-4	aqua - freshwater (Assessment factor 10)	0,095 (mg/L)
	aqua -marine water (Assessment factor 100)	0,0095 (mg/L)
	aqua - intermittent releases (Assessment factor 100)	0,0272 (mg/L)

PNEC: Predicted No Effect Concentration, (concentración prevista sin efecto) concentración de la sustancia por debajo de la cual no se esperan efectos negativos en el comportamiento medioambiental.

8.2 Controles de la exposición.

Medidas de orden técnico:

Proveer una ventilación adecuada, lo cual puede conseguirse mediante una buena extracción-ventilación local y un buen sistema general de extracción.

Concentración:	100 %
Usos:	Genérico industrial
Protección respiratoria:	
EPI:	Máscara filtrante para la protección contra gases y partículas
Características:	Marcado «CE» Categoría III. La máscara debe tener amplio campo de visión y forma anatómica para ofrecer estanqueidad y hermeticidad.
Normas CEN:	EN 136, EN 140, EN 405
Mantenimiento:	No se debe almacenar en lugares expuestos a temperaturas elevadas y ambientes húmedos antes de su utilización. Se debe controlar especialmente el estado de las válvulas de inhalación y exhalación del adaptador facial.
Observaciones:	Se deberán leer atentamente las instrucciones del fabricante al respecto del uso y mantenimiento del equipo. Se acoplarán al equipo los filtros necesarios en función de las características específicas del riesgo (Partículas y aerosoles: P1-P2-P3, Gases y vapores: A-B-E-K-AX) cambiándose según aconseje el fabricante.
Tipo de filtro necesario:	A2
Protección de las manos:	
EPI:	Guantes de protección contra productos químicos
Características:	Marcado «CE» Categoría III.
Normas CEN:	EN 374-1, EN 374-2, EN 374-3, EN 420



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Mantenimiento:	Se guardarán en un lugar seco, alejados de posibles fuentes de calor, y se evitará la exposición a los rayos solares en la medida de lo posible. No se realizarán sobre los guantes modificaciones que puedan alterar su resistencia ni se aplicarán pinturas, disolventes o adhesivos.				
Observaciones:	Los guantes deben ser de la talla correcta, y ajustarse a la mano sin quedar demasiado holgados ni demasiado apretados. Se deberán utilizar siempre con las manos limpias y secas.				
Material:	PVC (Cloruro de polivinilo)	Tiempo de penetración (min.):	> 480	Espesor del material (mm):	0,35
Protección de los ojos:					
EPI:	Gafas de protección con montura integral				
Características:	Marcado «CE» Categoría II. Protector de ojos de montura integral para la protección contra salpicaduras de líquidos, polvo, humos, nieblas y vapores.				
Normas CEN:	EN 165, EN 166, EN 167, EN 168				
Mantenimiento:	La visibilidad a través de los oculares debe ser óptima para lo cual estos elementos se deben limpiar a diario, los protectores deben desinfectarse periódicamente siguiendo las instrucciones del fabricante.				
Observaciones:	Indicadores de deterioro pueden ser: coloración amarilla de los oculares, arañazos superficiales en los oculares, rasgaduras, etc.				
Protección de la piel:					
EPI:	Ropa de protección con propiedades antiestáticas				
Características:	Marcado «CE» Categoría II. La ropa de protección no debe ser estrecha o estar suelta para que no interfiera en los movimientos del usuario.				
Normas CEN:	EN 340, EN 1149-1, EN 1149-2, EN 1149-3, EN 1149-5				
Mantenimiento:	Se deben seguir las instrucciones de lavado y conservación proporcionadas por el fabricante para garantizar una protección invariable.				
Observaciones:	La ropa de protección debería proporcionar un nivel de confort consistente con el nivel de protección que debe proporcionar contra el riesgo contra el que protege, con las condiciones ambientales, el nivel de actividad del usuario y el tiempo de uso previsto.				
EPI:	Calzado de protección con propiedades antiestáticas				
Características:	Marcado «CE» Categoría II.				
Normas CEN:	EN ISO 13287, EN ISO 20344, EN ISO 20346				
Mantenimiento:	El calzado debe ser objeto de un control regular, si su estado es deficiente se deberá dejar de utilizar y ser reemplazado.				
Observaciones:	La comodidad en el uso y la aceptabilidad son factores que se valoran de modo muy distinto según los individuos. Por tanto conviene probar distintos modelos de calzado v. a ser posible, anchos distintos.				

SECCIÓN 9: PROPIEDADES FÍSICAS Y QUÍMICAS.

9.1 Información sobre propiedades físicas y químicas básicas.

Aspecto: Sólido blanco

Color: N.D./N.A.

Olor: Inodoro

Umbral olfativo: N.D./N.A.

pH: N.D./N.A.

Punto de Fusión: 287 °C

Punto/intervalo de ebullición: N.D./N.A.

Punto de inflamación: > 60 °C

Tasa de evaporación: N.D./N.A.

Inflamabilidad (sólido, gas): No

Límite inferior de explosión: N.D./N.A.

Límite superior de explosión: N.D./N.A.

Presión de vapor: N.D./N.A.

Densidad de vapor: N.D./N.A.

Densidad relativa: 1.735 g/cm³

Solubilidad: N.D./N.A.

Liposolubilidad: N.D./N.A.

Hidrosolubilidad: 139g/100cc (21 °C)

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

Temperatura de autoinflamación: N.D./N.A.

Temperatura de descomposición: N.D./N.A.

Viscosidad: N.D./N.A.

Propiedades explosivas: N.D./N.A.

Propiedades comburentes: N.D./N.A.

N.D./N.A. = No Disponible/No Aplicable debido a la naturaleza del producto.

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9.2 Otros datos.

Punto de Gota: N.D./N.A.
Centelleo: N.D./N.A.
Viscosidad cinemática: N.D./N.A.
N.D./N.A.= No Disponible/No Aplicable debido a la naturaleza del producto.

SECCIÓN 10: ESTABILIDAD Y REACTIVIDAD.

10.1 Reactividad.

El producto no presenta peligros debido a su reactividad.

10.2 Estabilidad química.

Estable bajo las condiciones de manipulación y almacenamiento recomendadas (ver epígrafe 7).

10.3 Posibilidad de reacciones peligrosas.

El producto no presenta posibilidad de reacciones peligrosas.

10.4 Condiciones que deben evitarse.

Evitar cualquier tipo de manipulación incorrecta.

10.5 Materiales incompatibles.

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

10.6 Productos de descomposición peligrosos.

No se descompone si se destina a los usos previstos.

SECCIÓN 11: INFORMACIÓN TOXICOLÓGICA.

PREPARADO IRRITANTE. Salpicaduras en los ojos pueden causar irritación de los mismos.

11.1 Información sobre los efectos toxicológicos.

El contacto repetido o prolongado con el producto, puede causar la eliminación de la grasa de la piel, dando lugar a una dermatitis de contacto no alérgica y a que se absorba el producto a través de la piel.
Las salpicaduras en los ojos pueden causar irritación y daños reversibles.

Información Toxicológica.

Nombre	Toxicidad aguda			
	Tipo	Ensayo	Especie	Valor
tiocianato de sodio	Oral	LD50	Rata	541 mg/kg bw
	Cutánea	LD50	Rata	> 2000 mg/kg bw (male/female)
	Inhalación			

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N. CE: 208-754-4

a) toxicidad aguda;
Producto clasificado:

Toxicidad cutánea aguda, Categoría 4: Nocivo en contacto con la piel.
Toxicidad aguda por inhalación, Categoría 4: Nocivo en caso de inhalación.
Toxicidad oral aguda, Categoría 4: Nocivo en caso de ingestión.

b) corrosión o irritación cutáneas;
Datos no concluyentes para la clasificación.

c) lesiones oculares graves o irritación ocular;
Producto clasificado:
Irritación ocular, Categoría 2: Provoca irritación ocular grave.

d) sensibilización respiratoria o cutánea;
Datos no concluyentes para la clasificación.

e) mutagenicidad en células germinales;
Datos no concluyentes para la clasificación.

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- f) carcinogenicidad;
Datos no concluyentes para la clasificación.
- g) toxicidad para la reproducción;
Datos no concluyentes para la clasificación.
- h) toxicidad específica en determinados órganos (STOT) - exposición única;
Datos no concluyentes para la clasificación.
- i) toxicidad específica en determinados órganos (STOT) - exposición repetida;
Datos no concluyentes para la clasificación.
- j) peligro por aspiración;
Datos no concluyentes para la clasificación.

SECCIÓN 12: INFORMACIÓN ECOLÓGICA.

12.1 Toxicidad.

Nombre	Ecotoxicidad			
	Tipo	Ensayo	Especie	Valor
tiocianato de sodio N. CAS: 540-72-7 N. CE: 208-754-4	Peces	CL50	Pez	65 mg/l (96h)
	Invertebrados acuáticos	CE50	Dafnia magna	3.56 mg/l (48h)
	Plantas acuáticas	EC50	Algas	234.3 mg/L (72h)

12.2 Persistencia y degradabilidad.

No se dispone de información relativa a la biodegradabilidad.
No se dispone de información relativa a la degradabilidad.
No existe información disponible sobre la persistencia y degradabilidad del producto.

12.3 Potencial de Bioacumulación.

No se dispone de información relativa a la Bioacumulación.

12.4 Movilidad en el suelo.

No existe información disponible sobre la movilidad en el suelo.
No se debe permitir que el producto pase a las alcantarillas o a cursos de agua.
Evitar la penetración en el terreno.

12.5 Resultados de la valoración PBT y mPmB.

No existe información disponible sobre la valoración PBT y mPmB del producto.

12.6 Otros efectos adversos.

No existe información disponible sobre otros efectos adversos para el medio ambiente.

SECCIÓN 13: CONSIDERACIONES RELATIVAS A LA ELIMINACIÓN.

13.1 Métodos para el tratamiento de residuos.

No se permite su vertido en alcantarillas o cursos de agua. Los residuos y envases vacíos deben manipularse y eliminarse de acuerdo con las legislaciones local/nacional vigentes.
Seguir las disposiciones de la Directiva 2008/98/CE respecto a la gestión de residuos.

SECCIÓN 14: INFORMACIÓN RELATIVA AL TRANSPORTE.

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No es peligroso en el transporte. En caso de accidente y vertido del producto actuar según el punto 6.

14.1 Número ONU.

No es peligroso en el transporte.

14.2 Designación oficial de transporte de las Naciones Unidas.

Descripción:

ADR: No es peligroso en el transporte.

IMDG: No es peligroso en el transporte.

ICAO/IATA: No es peligroso en el transporte.

14.3 Clase(s) de peligro para el transporte.

No es peligroso en el transporte.

14.4 Grupo de embalaje.

No es peligroso en el transporte.

14.5 Peligros para el medio ambiente.

No es peligroso en el transporte.

14.6 Precauciones particulares para los usuarios.

No es peligroso en el transporte.

14.7 Transporte a granel con arreglo al anexo II del Convenio MARPOL y del Código IBC.

No es peligroso en el transporte.

SECCIÓN 15: INFORMACIÓN REGLAMENTARIA.

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

El producto no está afectado por el Reglamento (CE) nº 1005/2009 del Parlamento Europeo y del Consejo, de 16 de septiembre de 2009, sobre las sustancias que agotan la capa de ozono.

Compuesto orgánico volátil (COV)

Contenido de COV (p/p): 0 %

Contenido de COV: 0 g/l

El producto no se encuentra afectado por la Directiva 2012/18/UE (SEVESO III).

El producto no está afectado por el Reglamento (UE) No 528/2012 relativo a la comercialización y el uso de los biocidas.

El producto no se encuentra afectado por el procedimiento establecido en el Reglamento (UE) No 649/2012, relativo a la exportación e importación de productos químicos peligrosos.

15.2 Evaluación de la seguridad química.

No se ha llevado a cabo una evaluación de la seguridad química del producto.

Se dispone de Escenario de Exposición del producto.

SECCIÓN 16: OTRA INFORMACIÓN.

Códigos de clasificación:

Acute Tox. 4 : Toxicidad cutánea aguda, Categoría 4

Acute Tox. 4 : Toxicidad aguda por inhalación, Categoría 4

Acute Tox. 4 : Toxicidad oral aguda, Categoría 4

Aquatic Chronic 3 : Efectos crónicos para el medio ambiente acuático, Categoría 3

Eye Irrit. 2 : Irritación ocular, Categoría 2

Secciones modificadas respecto a la versión anterior:

1,2,9,14,16

Se aconseja realizar formación básica con respecto a seguridad e higiene laboral para realizar una correcta manipulación del producto.

-Continúa en la página siguiente.-

FICHA DE DATOS DE SEGURIDAD

(de acuerdo con el Reglamento (UE) 2015/830)

445A2T-TIOCIANATO SODICO

Versión: 13

Fecha de revisión: 05/12/2017



Página 9 de 9

Fecha de impresión: 05/12/2017

Se dispone de Escenario de Exposición del producto.

Abreviaturas y acrónimos utilizados:

CEN: Comité Europeo de Normalización.

DMEL: Derived Minimal Effect Level, nivel de exposición que corresponde a un riesgo bajo, que debe considerarse un riesgo mínimo tolerable.

DNEL: Derived No Effect Level, (nivel sin efecto obtenido) nivel de exposición a la sustancia por debajo del cual no se prevén efectos adversos.

EC50: Concentración efectiva media.

EPI: Equipo de protección personal.

LC50: Concentración Letal, 50%.

LD50: Dosis Letal, 50%.

PNEC: Predicted No Effect Concentration, (concentración prevista sin efecto) concentración de la sustancia por debajo de la cual no se esperan efectos negativos en el comportamiento medioambiental.

Principales referencias bibliográficas y fuentes de datos:

<http://eur-lex.europa.eu/homepage.html>

<http://echa.europa.eu/>

Reglamento (UE) 2015/830.

Reglamento (CE) No 1907/2006.

Reglamento (EU) No 1272/2008.

La información facilitada en esta ficha de Datos de Seguridad ha sido redactada de acuerdo con el REGLAMENTO (UE) 2015/830 DE LA COMISIÓN de 28 de mayo de 2015 por el que se modifica el Reglamento (CE) no 1907/2006 del Parlamento Europeo y del Consejo, relativo al registro, la evaluación, la autorización y la restricción de las sustancias y mezclas químicas (REACH), por el que se crea la Agencia Europea de Sustancias y Preparados Químicos, se modifica la Directiva 1999/45/CE y se derogan el Reglamento (CEE) nº 793/93 del Consejo y el Reglamento (CE) nº 1488/94 de la Comisión así como la Directiva 76/769/CEE del Consejo y las Directivas 91/155/CEE, 93/67/CEE, 93/105/CE y 2000/21/CE de la Comisión.

La información de esta Ficha de Datos de Seguridad del Producto está basada en los conocimientos actuales y en las leyes vigentes de la CE y nacionales, en cuanto que las condiciones de trabajo de los usuarios están fuera de nuestro conocimiento y control. El producto no debe utilizarse para fines distintos a aquellos que se especifican, sin tener primero una instrucción por escrito, de su manejo. Es siempre responsabilidad del usuario tomar las medidas oportunas con el fin de cumplir con las exigencias establecidas en las legislaciones.

Annex to extended safety data sheet (eSDS)

ES1: Manufacture of Sodium thiocyanate (100% solid and 50% aqueous solution)
1 Description of the ES 1

ES1: Manufacture Sodium thiocyanate 100% solid and 50% aqueous solution CAS: 540-72-7	
Section 1	Exposure Scenario Title
Title	Manufacture of NaSCN (, low dustiness)
Use Descriptor	Sector of Use: Industrial (SU3, SU8)
	Process Categories: PROC2, PROC8b, PROC15;
	Environmental Release Categories: ERC 1
Processes, tasks, activities covered	Manufacture of NaSCN. Includes recycling/recovery, material transfers, storage, maintenance and (un)loading (including road car and bulk container), sampling and associated laboratory activities.
GES exposure criteria	<p>Worker</p> <p>DNEL (inhalation): 3.00 mg/m³</p> <p>DNEL (skin): 1.68 mg/kg bw/day</p> <p>Not classified as 1 or 2 Carcinogenic Mutagenic and/or Reproduction toxic</p> <p>Environmental PNECs (SCN- equivalent)</p> <p>PNEC aqua (freshwater): 0.095 mg/L</p> <p>PNEC aqua (marine water): 0.0095 mg/L</p> <p>PNEC aqua (intermittent release): 0.0272 mg/L</p> <p>PNEC sediment (freshwater): 0.543 mg/kg sediment dw</p> <p>PNEC sediment (marine water): 0.0543 mg/kg sediment dw</p> <p>PNEC soil: 6.336 mg/kg soil dw</p> <p>PNEC stp: 30 mg/L</p> <p>PNEC oral: 1.667 mg/kg food</p> <p>Not classified as Persistent Bio Accumulation and toxic, nor very Persistent and very Bio accumulating</p>
Section 2	Operational conditions and risk management measures
Section 2.1	Control of worker exposure
Product characteristics	
Physical form of product	Solid, low dustiness [OC1]; Solid, vapor pressure: << 0.01 Pa Aqueous solution, vapor pressure of substance << 0.01 Pa (disassociation is complete) Exposure only by aerosols
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].
Amounts used	Varies between milliliters (sampling) and cubic meters (material transfers) [OC13].;
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]
Human factors not influenced by risk management	<i>Not applicable</i>
Other Operational Conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented [G1]. Ensure operatives are trained to minimize exposures [EI119]. Assumes use at not > 20°C above ambient [G15];

	Indoor [OC8] and Outdoor [OC9]
Contributing Scenarios	Risk Management Measures
<p><i>Due to eye irritating properties of the substance: Use suitable eye protection [PPE26].</i></p> <p><i>Avoid skin contact.</i></p>	
PROC 2 Automated process with (semi) closed systems [CS93]; Continuous process [CS54]; Process sampling [CS2] (open systems) [CS108]. General exposures (closed systems) [CS15]; Material transfers [CS3]; Drying and storage [CS12]; Bulk product storage [CS85]; Centrifuging including charging [CS127].	No specific measures identified [EI18]. Recommendation: <i>Ensure the system is closed.</i> <i>Clear transfer lines prior to de-coupling [E39]. Clear spills immediately [C&H13].</i>
PROC 8b Product packaging [CS124]. Dedicated facility [CS81]; General exposures (open systems) [CS16]. Material transfers [CS3]. With sample collection [CS56].	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. Recommendation: <i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Use bulk or semi-bulk handling systems [E43]; Use drum pumps [E53]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].</i>
PROC 15 Laboratory activities [CS36]. Small scale [CS61]. Manual [CS34].	No specific measures identified [EI18].
Section 2.2	Control of environmental exposure
Product characteristics	Non-hydrophobic [PrC4b]. Readily biodegradable [PrC5a].
Amounts used	Fraction of EU tonnage used in region: 1 [A1]. Regional use tonnage (tonnes/year): 15260 as SCN ⁻ [A2]. Fraction of Regional tonnage used locally: 1 [A3]. Annual site tonnage (tonnes/year): 15260 as SCN ⁻ [A5]
Frequency and duration of use	Continuous release. [FD2] Emission Days (days/year): 365 [FD4].
Other Operational Conditions of use affecting environmental exposure	Product applied in aqueous process solution with negligible volatilization [OOC23]. Waste water is collected in a tank. The quality of the water in the tank is checked regularly. Generally one tank per day is discharged to the STP which equals 10,000 m ³ /year with a concentration of 500 mg/l SCN ⁻ . Local freshwater dilution factor: 4.3E+4 [EF1] (based on standard STP). Sewage sludge should not be applied onto soil. Filter material used for cleaning of the product should be collected and incinerated. Cooling water used in process: 32250 m ³ /year; 1 mg/l SCN ⁻ . Discharge of cooling water is directly to surface water (river Rhine). Local freshwater dilution factor: 1.426E+3 [EF1]. Flow rate of the river: 1,000 m ³ /s (worst case) (source: www.hgk.de). Concentration in surface water during emission episode: 7.0E-4 mg/l SCN ⁻ .

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	All waste water should go to a STP. Risk from environmental exposure is driven by freshwater. [TCR1a].
Organization measures to prevent/limit release from site	Ensure control measures are regularly inspected and maintained [E6] Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases [W2].
Conditions and measures related to municipal sewage treatment plant	Prevent environmental discharge consistent with regulatory requirements [OMS4]. Sewage sludge should not be applied onto soil.
Conditions and measures related to external treatment of waste for disposal	Filter material used for cleaning of the product should be collected and incinerated. External treatment and disposal of waste should comply with applicable local and/or national regulations.[ETW3]
Conditions and measures related to external recovery of waste	Not applicable
Other environmental control measures additional to above	Not applicable
Section 3	Exposure Estimation
3.1. Health.	
Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented [G29]	
3.2. Environment	Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented [G29]
Section 4	Guidance to check compliance with the Exposure Scenario
4.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21] version 2.0	
4.2. Environment	
	EUSES 2.1 has been used to estimate environmental exposure [EE3] unless otherwise indicated.
Section 5	Additional good practice advice beyond the REACH Chemical Safety Assessment
Control of Worker Exposure	
Cleaning [CS47]	Clear spills immediately [C&H13]: Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17] and Use suitable eye protection [PPE26]
Emptying bags	In case the solid substance is lumpy or is one big lump crush the substance carefully in a sealed/closed (plastic) bag. Avoid any breakage of the bag during handling.
Use of PPE	<u>Skin protection:</u> Gloves take attention to the breakthrough time of NaSCN. Train the employees putting on and off the gloves, and how to use gloves in a proper way. <u>Respiratory protection:</u> Respirators: - Wear a disposable mask only once - Clean the non-disposable masks after every use and storage in a clean box and area. Preferable to wear respirators ≤ 2 hours a day.

ES2: Distribution and Formulation, sodium thiocyanate
1 Distribution and Formulation, sodium thiocyanate (formulated product, low dustiness)

ES2: Industrial Distribution - Formulation	
Sodium thiocyanate solid and in an aqueous solution CAS: 540-72-7	
Section 1	Exposure Scenario Title
Title	Distribution and Formulation of NaSCN (low dustiness)
Use Descriptor	Sector of Use: Industrial (SU3, SU8, SU9, SU10)
	Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15; PROC19
	Environmental Release Categories: ERC2
Processes, tasks, activities covered	Formulation, packing and re-packing of the substance (including drums and small packs) and his mixtures in batch or continuous operations, including storage, material transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and laboratory activities. Loading (including marine vessel/barge, rail/road car and IBC loading) including its distribution.
GES exposure criteria	<p>Worker</p> <p>DNEL (inhalation): 3.00 mg/m³</p> <p>DNEL (skin): 1.68 mg/kg bw/day</p> <p>Not classified as 1 or 2 Carcinogenic Mutagenic and/or Reproduction toxic</p> <p>Environmental PNECs (SCN- equivalent)</p> <p>PNEC aqua (freshwater): 0.095 mg/L</p> <p>PNEC aqua (marine water): 0.0095 mg/L</p> <p>PNEC aqua (intermittent release): 0.0272 mg/L</p> <p>PNEC sediment (freshwater): 0.543 mg/kg sediment dw</p> <p>PNEC sediment (marine water): 0.0543 mg/kg sediment dw</p> <p>PNEC soil: 6.336 mg/kg soil dw</p> <p>PNEC stp: 30 mg/L</p> <p>PNEC oral: 1.667 mg/kg food</p> <p>Not classified as Persistent Bio Accumulation and toxic, nor very Persistent and very Bio accumulating</p>
Section 2	Operational conditions and risk management measures
Section 2.1	Control of worker exposure
Product characteristics	
Physical form of product	Solid, low dustiness [OC1]; Solid, vapor pressure: < 0.01 Pa Aqueous solution, vapor pressure of substance < 0.01 Pa (completely dissociated) Exposure only by aerosols
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].
Amounts used	Varies between milliliters (sampling) and cubic meters (material transfers) [OC13].
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]
Human factors not influenced by risk management	<i>Not applicable</i>

Other Operational Conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented [G1]. Ensure operatives are trained to minimize exposures [E119]. Assumes use at not > 20°C above ambient [G15]; Indoor [OC8]
Contributing Scenarios	Risk Management Measures
<i>Due to eye irritating properties of the substance: Use suitable eye protection [PPE26].</i> <i>Avoid skin contact.</i>	
PROC1: General exposures (closed systems) [CS15]. Material transfers [CS3]. Mixing operations (closed systems) [CS29]. Process sampling [CS2] (closed systems) [CS107]	No specific measures identified [E118]. Recommendation: Ensure the system is closed; <i>Clear transfer lines prior to de-coupling [E39]; Drain down and flush system prior to equipment break-in or maintenance [E55].</i>
PROC2: General exposures (closed systems) [CS15]; Continuous process [CS54]. Material transfers [CS3]; Mixing operations (closed systems) [CS29]; Process sampling [CS2] (open systems) [CS108].	No specific measures identified [E118]. Recommendation: <i>Ensure the system is closed.</i> <i>Clear transfer lines prior to de-coupling [E39]. Clear spills immediately [C&H13].</i>
PROC3: General exposures (closed systems) [CS15]; Use in contained batch processes [CS37]; Material transfers [CS3]; Mixing operations (closed systems) [CS29]. Process sampling [CS2] (open systems) [CS108].	No specific measures identified [E118]. Recommendation: <i>Ensure the system is closed; Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13].</i>
PROC4: General exposures [CS1]; Batch process [CS55] (open systems) [CS108]	>5%: Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. Recommendation: <i>Use bulk or semi-bulk handling systems [E43]; Use drum pumps [E53].</i> <i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].</i>
PROC5: General exposures [CS1]; Mixing operations (open systems) [CS30]; Batch process [CS55];	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Recommendation: <i>Use bulk or semi-bulk handling systems [E43]; Use drum pumps [E53].</i> <i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean</i>

	equipment and the work area every day [C&H3].{Clear spills immediately [C&H13]
PROC8a: General exposures [CS1]. Non-dedicated facility [CS82] Material transfers [CS3];	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Recommendation: Use bulk or semi-bulk handling systems [E43]; Use drum pumps [E53]; Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].
PROC8b: General exposures [CS1]. Dedicated facility [CS81] Material transfers [CS3];	>5%: Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. Recommendation: Use bulk or semi-bulk handling systems [E43]; Use drum pumps [E53]. Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].
PROC9: General exposures [CS1]. ; Dedicated facility [CS81] Material transfers [CS3]; Drum and small package filling [CS6];	>5%: Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. Recommendation: Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H]. Clear spills immediately [C&H13].
PROC10: Rolling, Brushing [CS51] (open systems) [CS108]; Roller, spreader, flow application [CS98]; General exposures [CS1]; Equipment cleaning and maintenance [CS39].	Limit the substance content in the product to 25% [OC18] and Wear chemically resistant gloves (tested to EN374) in combination with specific employee training [PPE17] Recommendation Use long handled tools where possible [E50]; Clean equipment and the work area every day [C&H3]; Clear spills immediately [C&H13]; Avoid splashing [C&H15].
PROC14: General exposures (open systems) [CS16]; Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100].	> 5%: Wear suitable gloves tested to EN374 [PPE15]. Recommendation: Drain down and flush system prior to equipment break-in or maintenance [E55]; Clear spills immediately [C&H13]; Clean equipment and the work area every day [C&H3].
PROC15: Laboratory activities [CS36]; Small scale [CS61]. Manual [CS34].	No specific measures identified [EI18].
PROC 19: Manual [CS34]; Mixing operations (open systems) [CS30].	Limit the substance content in the product to 5% [OC17] and Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].

	<i>Recommendation:</i> <i>Clear spills immediately [C&H13]. Clean equipment and the work area every day [C&H3].</i>
Section 2.2	Control of environmental exposure
Product characteristics	Non-hydrophobic [PrC4b]. Readily biodegradable [PrC5a].
Frequency and duration of use	Continuous release. [FD2] Emission Days (days/year): 300 [FD4].
Other Operational Conditions of use affecting environmental exposure	Product applied in aqueous process solution with negligible volatilization [OOC23]. Local freshwater dilution factor: 10 [EF1]. Local marine water dilution factor: 100 [EF2]; Spent process fluid discharged to wastewater. [OOC19]
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Spent process fluid discharged to wastewater. [OOC19]
Organization measures to prevent/limit release from site	Not applicable
Conditions and measures related to municipal sewage treatment plant	Not applicable
Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]
Conditions and measures related to external recovery of waste	Not applicable
Other environmental control measures additional to above	Not applicable
Section 3	Exposure Estimation
3.1. Health	
Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the eSDS when the operational conditions/risk of management measures given in section 2 are implemented [G29])	
3.2. Environment	
	Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented [G29]
Section 4	Guidance to check compliance with the Exposure Scenario
4.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21] version 2.0	
4.2. Environment	EUSES 2.1 has been used to estimate environmental exposure [EE3] unless otherwise indicated.
Section 5	Additional good practice advice beyond the REACH Chemical Safety Assessment
Control of Worker Exposure	
Cleaning [CS47]	Clear spills immediately [C&H13]; Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17] and Use suitable eye protection [PPE26]
Emptying bags (solid)	In case the solid substance is lumpy or is one big lump crush the substance carefully in a sealed/closed (plastic) bag. Avoid any breakage of the bag during handling

Use of PPE	<p><u>Skin protection:</u></p> <p>Gloves take attention to the breakthrough time of NaSCN. Train the employees how to put on and off the gloves, and how to use gloves in a proper way.</p> <p><u>Respiratory protection:</u></p> <p>Respirators: - Wear a disposable mask only once</p> <p>- Clean the non-disposable masks after every use and storage in a clean box and area.</p> <p>Preferable to wear respirators \leq 2 hours a day.</p>
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2 Distribution and Formulation, sodium thiocyanate (formulated product: medium dustiness)

ES2: Industrial Distribution- Formulation	
Sodium thiocyanate solid (formulated product: medium dustiness) CAS: 540-72-7	
Section 1	Exposure scenario Title
Title	Distribution and Formulation of solid NaSCN (medium dustiness).
Use Descriptor	Sector of Use: Industrial (SU3, SU8, SU9, SU10)
	Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15, PROC19.
	Environmental Release Categories: ERC2
Processes, tasks, activities covered	Covers the use in all kinds of applications of non spraying formulations including material receipt, storage, preparation and transfer, application by roller and brush, wiping, dip, equipment cleaning, maintenance and laboratory activities.
GES exposure criteria	<p>Worker</p> <p>DNEL (inhalation): 3.00 mg/m³</p> <p>DNEL (skin): 1.68 mg/kg bw/day</p> <p>Not classified as 1 or 2 Carcinogenic Mutagenic and/or Reproduction toxic</p> <p>Environmental PNECs (SCN- equivalent)</p> <p>PNEC aqua (freshwater): 0.095 mg/L</p> <p>PNEC aqua (marine water): 0.0095 mg/L</p> <p>PNEC aqua (intermittent release): 0.0272 mg/L</p> <p>PNEC sediment (freshwater): 0.543 mg/kg sediment dw</p> <p>PNEC sediment (marine water): 0.0543 mg/kg sediment dw</p> <p>PNEC soil: 6.336 mg/kg soil dw</p> <p>PNEC stp: 30 mg/L</p> <p>PNEC oral: 1.667 mg/kg food</p> <p>Not classified as Persistent Bio Accumulation and toxic, nor very Persistent and very Bio accumulating</p>
Section 2	Operational conditions and risk management measures
Section 2.1	Control of worker exposure
Product characteristics	
Physical form of product	Solid, medium dustiness [OC2].
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].
Amounts used	Varies between milliliters (sampling) and cubic meters (material transfers) [OC13]
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]

Human factors not influenced by risk management	<i>Not applicable</i>
Other Operational Conditions affecting worker exposure	<p>Assumes a good basic standard of occupational hygiene is implemented [G1]. Ensure operatives are trained to minimize exposures [EI119].</p> <p>Assumes use at not > 20°C above ambient [G15];</p> <p>Assumes activities are at ambient temperature (unless stated differently) [G17].</p> <p>Indoor [OC8].</p>
Contributing Scenarios	Risk Management Measures
<p><i>Due to eye irritating properties of the substance: Use suitable eye protection [PPE26].</i></p> <p><i>Avoid skin contact.</i></p>	
<p>PROC1:</p> <p>General exposures (closed systems) [CS15].</p> <p>Material transfers [CS3]. Mixing operations (closed systems) [CS29].</p> <p>Process sampling [CS2] (closed systems) [CS107]</p>	<p>No specific measures identified [EI18].</p> <p>Recommendation:</p> <p><i>Ensure the system is close. Clear transfer lines prior to de-coupling [E39].</i></p>
<p>PROC2:</p> <p>General exposures (closed systems) [CS15];</p> <p>Material transfers [CS3]; Mixing operations (closed systems) [CS29];</p> <p>Process sampling [CS2] (open systems) [CS108].</p>	<p>>25%: Wear suitable gloves tested to EN374 [PPE15].</p> <p>Recommendation:</p> <p><i>Ensure the system is close. Clear transfer lines prior to de-coupling [E39]. Clear spills immediately [C&H13].</i></p>
<p>PROC3:</p> <p>General exposures (closed systems) [CS15]; Use in contained batch processes [CS37];</p> <p>Material transfers [CS3]; Mixing operations (closed systems) [CS29].</p> <p>Process sampling [CS2] (open systems) [CS108].</p>	<p>No specific measures identified [EI18].</p> <p>Recommendation:</p> <p><i>Ensure the system is closed. Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13].</i></p>
<p>PROC4:</p> <p>General exposures [CS1]; Batch process [CS55] (open systems) [CS108]</p>	<p>Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. Plus:</p> <p>5-25%: Avoid carrying out operation for more than 4 hours [OC12]</p> <p>> 25 %: Ensure material transfers are under containment or extract ventilation [E66] or Provide extract ventilation to material transfer points and other openings [E82]. (Efficiency ≥ 80%).</p> <p>Recommendation:</p> <p><i>Use bulk or semi-bulk handling systems [E43]. Discharge sacks via suitable vented charge chute [E44].</i></p> <p><i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean</i></p>

	equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].
PROC5: General exposures [CS1]; Mixing operations (open systems) [CS30]; Batch process [CS55];	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Plus: 5-25%: Avoid carrying out operation for more than 4 hours [OC12] > 25 %: Ensure material transfers are under containment or extract ventilation [E66] or Provide extract ventilation to material transfer points and other openings [E82]. (Efficiency ≥ 80%). Recommendation: Use bulk or semi-bulk handling systems [E43]. Discharge sacks via suitable vented charge chute [E44]. Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].
PROC8a: General exposures [CS1]. Non-dedicated facility [CS82] Material transfers [CS3];	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Plus: 5-25%: Avoid carrying out operation for more than 4 hours [OC12] > 25 %: Ensure material transfers are under containment or extract ventilation [E66] or Provide extract ventilation to material transfer points and other openings [E82]. (Efficiency ≥ 80%). Recommendation: Use bulk or semi-bulk handling systems [E43]. Discharge sacks via suitable vented charge chute [E44]. Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].
PROC8b: General exposures [CS1]. Dedicated facility [CS81] Material transfers [CS3];	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. Plus: 5-25%: Avoid carrying out operation for more than 4 hours [OC12] > 25 %: Ensure material transfers are under containment or extract ventilation [E66] or Provide extract ventilation to material transfer points and other openings [E82]. (Efficiency ≥ 80%). Recommendation: Use bulk or semi-bulk handling systems [E43]. Discharge sacks via suitable vented charge chute [E44]. Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].
PROC9: General exposures [CS1]. ; Dedicated facility [CS81] Material transfers [CS3]; Drum and small package filling [CS6];	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. Plus: 5-25%: Avoid carrying out operation for more than 4 hours [OC12]

	<p>> 25 %: Ensure material transfers are under containment or extract ventilation [E66] or Provide extract ventilation to material transfer points and other openings [E82]. (Efficiency \geq 80%).</p> <p>Recommendation: Use bulk or semi-bulk handling systems [E43]. Discharge sacks via suitable vented charge chute [E44]. Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].</p>
PROC14: General exposures (open systems) [CS16]; Production or preparation of articles by tableting, compression, extrusion or pelletisation [CS100].	<p>> 5%: Wear suitable gloves tested to EN374 [PPE15].</p> <p>Recommendation: Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].</p>
PROC15: Laboratory activities [CS36]; Small scale [CS61]. Manual [CS34].	<p>No specific measures identified [EI18].</p>
PROC 19: Manual [CS34]; Mixing operations (open systems) [CS30].	<p>Limit the substance content in the product to 5% [OC17];</p> <p>Avoid carrying out operation for more than 1 hour [OC11];</p> <p>Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>Recommendation: Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].</p>
Section 2.2	Control of environmental exposure
Product characteristics	Non-hydrophobic [PrC4b]. Readily biodegradable [PrC5a].
Frequency and duration of use	Continuous release. [FD2] Emission Days (days/year): 300 [FD4].
Other Operational Conditions of use affecting environmental exposure	Product applied in aqueous process solution with negligible volatilization [OOC23]. Local freshwater dilution factor: 10 [EF1]. Local marine water dilution factor: 100 [EF2]; Spent process fluid discharged to wastewater. [OOC19]
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Spent process fluid discharged to wastewater. [OOC19]
Organization measures to prevent/limit release from site	Not applicable
Conditions and measures related to municipal sewage treatment plant	Not applicable
Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]
Conditions and measures related to external recovery of waste	Not applicable
Other environmental control measures additional to above	Not applicable

Section 3	Exposure Estimation
3.1. Health	
Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the eSDS when the operational conditions/risk of management measures given in section 2 are implemented [G29])	
3.2. Environment	Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented [G29]
Section 4	Guidance to check compliance with the Exposure Scenario
4.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21] version 2.0	
4.2. Environment	EUSES 2.1 has been used to estimate environmental exposure [EE3] unless otherwise indicated.
Section 5	Additional good practice advice beyond the REACH Chemical Safety Assessment
Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37 (4) of REACH.	
Control of Worker Exposure	
Cleaning [CS47]	Clear spills immediately [C&H13]; Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17] and Use suitable eye protection [PPE26]
Use of PPE	<u>Skin protection:</u> Gloves take attention to the breakthrough time of NaSCN Train the employees how to correctly put on and off the gloves, and how to use gloves in a proper way. <u>Respiratory protection:</u> Respirators: - Wear a disposable mask only once - Clean the non-disposable masks after every use and storage in a clean box and area. Preferable to wear respirators ≤ 2 hours a day.

3. Distribution and Formulation, sodium thiocyanate (formulated product: high dustiness)

ES2: Industrial Distribution- Formulation ≤ 25% of Sodium thiocyanate solid (formulated product: high dustiness) CAS: 540-72-7	
Section 1	Exposure scenario Title
Title	Distribution and Formulation of solid NaSCN (high dustiness).
Use Descriptor	Sector of Use: Industrial (SU3, SU8, SU9, SU10)
	Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15, PROC19;
	Environmental Release Categories: ERC2
Processes, tasks, activities covered	Covers the use in all kinds of applications of non spraying formulations including material receipt, storage, preparation and transfer, application by roller and brush, wiping, dip, equipment cleaning, maintenance and laboratory activities.
GES exposure criteria	Worker DNEL (inhalation): 3.00 mg/m ³ DNEL (skin): 1.68 mg/kg bw/day

	<p>Not classified as 1 or 2 Carcinogenic Mutagenic and/or Reproduction toxic</p> <p>Environmental PNECs (SCN- equivalent)</p> <p>PNEC aqua (freshwater): 0.095 mg/L</p> <p>PNEC aqua (marine water): 0.0095 mg/L</p> <p>PNEC aqua (intermittent release): 0.0272 mg/L</p> <p>PNEC sediment (freshwater): 0.543 mg/kg sediment dw</p> <p>PNEC sediment (marine water): 0.0543 mg/kg sediment dw</p> <p>PNEC soil: 6.336 mg/kg soil dw</p> <p>PNEC stp: 30 mg/L</p> <p>PNEC oral: 1.667 mg/kg food</p> <p>Not classified as Persistent Bio Accumulation and toxic, nor very Persistent and very Bio accumulating</p>
Section 2	Operational conditions and risk management measures
Section 2.1	Control of worker exposure
Product characteristics	
Physical form of product	Solid, high dustiness [OC6].
Concentration of substance in product	Covers percentage substance in the product up to 25 % (unless stated differently) [G12].
Amounts used	Varies between milliliters (sampling) and cubic meters (material transfers) [OC13].
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]
Human factors not influenced by risk management	<i>Not applicable</i>
Other Operational Conditions affecting worker exposure	<p>Assumes a good basic standard of occupational hygiene is implemented [G1]. Ensure operatives are trained to minimize exposures [EI119].</p> <p>Assumes use at not > 20°C above ambient [G15];</p> <p>Assumes activities are at ambient temperature (unless stated differently) [G17].</p> <p>Indoor [OC8].</p>
Contributing Scenarios	Risk Management Measures
<p><i>Due to eye irritating properties of the substance: Use suitable eye protection [PPE26].</i></p> <p><i>Avoid skin contact</i></p> <p>Covers percentage substance in the product up to 25 % (unless stated differently) [G12].</p>	
<p>PROC1:</p> <p>General exposures (closed systems) [CS15].</p> <p>Material transfers [CS3]. Mixing operations (closed systems) [CS29].</p> <p>Process sampling [CS2] (closed systems) [CS107]</p>	<p>up to 100%: No specific measures identified [EI18].</p> <p>Recommendation:</p> <p><i>Ensure the system is closed. Drain down and flush system prior to equipment break-in or maintenance [E55].</i></p>
<p>PROC2:</p> <p>General exposures (closed systems) [CS15];</p> <p>Material transfers [CS3]; Mixing operations (closed systems) [CS29];</p> <p>Process sampling [CS2] (open systems)</p>	<p>No specific measures identified [EI18].</p> <p>Recommendation:</p> <p><i>Handle substance within a closed system [E47]. Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13].</i></p>

[CS108].	
PROC3: General exposures (closed systems) [CS15]; Use in contained batch processes [CS37]; Material transfers [CS3]; Mixing operations (closed systems) [CS29]. Process sampling [CS2] (open systems) [CS108].	<p>up to 100%: No specific measures identified [EI18].</p> <p>Recommendation: <i>Ensure the system is closed; Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13].</i></p>
PROC4: General exposures [CS1]; Batch process [CS55] (open systems) [CS108]	<p>Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. Plus:</p> <p>5-25%: Ensure material transfers are under containment or extract ventilation [E66] or Provide extract ventilation to material transfer points and other openings [E82]. (Efficiency: $\geq 90\%$) Or Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29] (Protection Factor ≥ 10).</p> <p><5%: Wear a disposable mask FFP1 (Assigned Protection Factor: 4) or better And avoid carrying out operation for more than 4 hours [OC12] Or Avoid carrying out operation for more than 1 hour [OC11]</p> <p>Recommendation: <i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13]. Clean equipment and the work area every day [C&H3].</i></p>
PROC5: General exposures [CS1]; Mixing operations (open systems) [CS30]; Batch process [CS55];	<p>Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>5-25%: Ensure material transfers are under containment or extract ventilation [E66] or Provide extract ventilation to material transfer points and other openings [E82]. (Efficiency: $\geq 90\%$) Or Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29] (Protection Factor ≥ 10).</p> <p><5%: Wear a disposable mask FFP1 (Assigned Protection Factor: 4) or better And avoid carrying out operation for more than 4 hours [OC12]</p> <p>Recommendation: <i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13]. Clean equipment and the work area every day [C&H3].</i></p>
PROC8a: General exposures [CS1]. Non-dedicated facility [CS82] Material transfers [CS3];	<p>Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Plus:</p>

	<p>5-25%: Avoid carrying out operation for more than 4 hours [OC12], Plus Ensure material transfers are under containment or extract ventilation [E66] or Provide extract ventilation to material transfer points and other openings [E82] (Efficiency: $\geq 90\%$) Or Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29] (Protection Factor ≥ 10).</p> <p><5%: Ensure material transfers are under containment or extract ventilation [E66] or Provide extract ventilation to material transfer points and other openings [E82] (Efficiency: $\geq 90\%$) Or Wear a disposable mask FFP1 (Assigned Protection Factor: 4) or better And avoid carrying out operation for more than 4 hours [OC12] Or Avoid carrying out operation for more than 1 hour [OC11]</p> <p>Recommendation: <i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13]. Clean equipment and the work area every day [C&H3].</i></p>
<p>PROC8b: General exposures [CS1]. Dedicated facility [CS81] Material transfers [CS3];</p>	<p>Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. Plus:</p> <p>5-25%: Ensure material transfers are under containment or extract ventilation [E66] or Provide extract ventilation to material transfer points and other openings [E82]. (Efficiency: $\geq 90\%$) Or Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29] (Protection Factor ≥ 10).</p> <p><5%: Wear a disposable mask FFP1 (Assigned Protection Factor: 4) or better And avoid carrying out operation for more than 4 hours [OC12] Or Avoid carrying out operation for more than 1 hour [OC11]</p> <p>Recommendation: <i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]; Clear spills immediately [C&H13].</i></p>
<p>PROC9: General exposures [CS1]. ; Dedicated facility [CS81] Material transfers [CS3]; Drum and small package filling [CS6];</p>	<p>Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. Plus:</p> <p>5-25%: Provide extract ventilation to material transfer points and other openings [E82]; Ensure material transfers are under containment or extract ventilation [E66] (Efficiency: $\geq 90\%$). Or Wear a disposable dust mask (FFP1, Assigned Protection Factor: 4) or better and Avoid carrying out operation for more than 4 hour [OC12].</p> <p>< 5%: Avoid carrying out operation for more than 4 hour [OC12]</p> <p>Recommendation: <i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]; Clear spills immediately [C&H13].</i></p>
<p>PROC14: General exposures (open systems) [CS16]; Production or preparation of articles by tableting, compression, extrusion or pelletisation [CS100].</p>	<p>Wear suitable gloves tested to EN374 [PPE15]. Plus:</p> <p>5 - 25%: Provide extract ventilation to material transfer points and other openings [E82]; Ensure material transfers are under containment or extract ventilation [E66]. (Efficiency: $\geq 90\%$) Or</p>

Avoid carrying out operation for more than 1 hours [OC11] **Or**
Avoid carrying out operation for more than 4 hours [OC12] and Wear a disposable dust mask (FFP1, Assigned Protection Factor: 4) or better

Recommendation:

Clear spills immediately [C&H13]; Clean equipment and the work area every day [C&H3].

PROC15:

Laboratory activities [CS36];
Small scale [CS61]. Manual [CS34].

Handle in a fume cupboard or under extract ventilation [E83]. (Efficiency: $\geq 80\%$)

PROC 19:

Manual [CS34]; Mixing operations (open systems) [CS30].

Limit the substance content in the product to 5% [OC17].

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Plus:

Avoid carrying out operation for more than 4 hours [OC11] and Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29] (Protection Factor ≥ 10).

Recommendation:

Clear spills immediately [C&H13]. Clean equipment and the work area every day [C&H3].

Section 2.2

Control of environmental exposure

Product characteristics

Non-hydrophobic [PrC4b]. Readily biodegradable [PrC5a].

Frequency and duration of use

Continuous release. [FD2] Emission Days (days/year): 300 [FD4].

Other Operational Conditions of use affecting environmental exposure

Product applied in aqueous process solution with negligible volatilization [OOC23].
Local freshwater dilution factor: 10 [EF1]. Local marine water dilution factor: 100 [EF2];
Spent process fluid discharged to wastewater. [OOC19]

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Spent process fluid discharged to wastewater. [OOC19]

Organization measures to prevent/limit release from site

Not applicable

Conditions and measures related to municipal sewage treatment plant

Not applicable

Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

Conditions and measures related to external recovery of waste

Not applicable

Other environmental control measures additional to above

Not applicable

Section 3

Exposure Estimation

3.1. Health

Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the eSDS when the operational conditions/risk of management measures given in section 2 are implemented [G29])

3.2. Environment

Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented [G29]

Section 4

Guidance to check compliance with the Exposure Scenario

4.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21] version 2.0

4.2. Environment

EUSES 2.1 has been used to estimate environmental exposure [EE3] unless otherwise indicated.

Section 5

Additional good practice advice beyond the REACH Chemical Safety Assessment

Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37 (4) of REACH.

Control of Worker Exposure

Cleaning [CS47]

Clear spills immediately [C&H13]; Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17] and Use suitable eye protection [PPE26]

Use of PPE

Skin protection:

Gloves take attention to the breakthrough time of NaSCN. Train the employees how to put on and off the gloves and how to use gloves in a proper way.

Respiratory protection:

Respirators: - Wear a disposable mask only once
 - Clean the non-disposable masks after every use and storage in a clean box and area.

Preferable to wear respirators \leq 2 hours a day.

ES3: Use as an intermediate or in synthesis (100% solid and 50% aqueous solution)
Description of ES 3

ES3: Industrial use of Sodium thiocyanate as an intermediate or in synthesis 100% solid and 50% in an aqueous solution CAS: 540-72-7	
Section 1	Exposure Scenario Title
Title	Use of NaSCN as an intermediate or as a process chemical or extraction agent in synthesis (low dustiness)
Use Descriptor	Sector of Use: Industrial (SU 3, SU8, SU9)
	Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC15;
	Environmental Release Categories: ERC 4, ERC6a, ERC8a
Processes, tasks, activities covered	Use of NASCN as an intermediate or process chemical or extraction agent. Includes recycling/recovery, material transfers, storage, maintenance and (un)loading (including road car and bulk container), sampling and associated laboratory activities.
GES exposure criteria	Worker DNEL (inhalation): 3.00 mg/m ³ DNEL (skin): 1.68 mg/kg bw/day Not classified as 1 or 2 Carcinogenic Mutagenic and/or Reproduction toxic Environmental PNECs (SCN- equivalent) PNEC aqua (freshwater): 0.095 mg/L PNEC aqua (marine water): 0.0095 mg/L PNEC aqua (intermittent release): 0.0272 mg/L PNEC sediment (freshwater): 0.543 mg/kg sediment dw PNEC sediment (marine water): 0.0543 mg/kg sediment dw PNEC soil: 6.336 mg/kg soil dw PNEC stp: 30 mg/L PNEC oral: 1.667 mg/kg food Not classified as Persistent Bio Accumulation and toxic, nor very Persistent and very Bio accumulating
Section 2	Operational conditions and risk management measures
Section 2.1	Control of worker exposure
Product characteristics	
Physical form of product	Solid, low dustiness [OC1]; Solid, vapor pressure: <<0.01 Pa Aqueous solution, vapor pressure of substance: << 0.01 Pa (completely dissociated) Exposure only by aerosols
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].
Amounts used	Varies between milliliters (sampling) and cubic meters (material transfers) [OC13].
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]
Human factors not influenced by risk management	<i>Not applicable</i>

ES3: Industrial use of Sodium thiocyanate as an intermediate or in synthesis 100% solid and 50% in an aqueous solution
CAS: 540-72-7

Other Operational Conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented [G1]. Ensure operatives are trained to minimize exposures [EI119]. Assumes use at not > 20°C above ambient [G15]; Indoor [OC8] and Outdoor [OC9]. Solid and solution
Contributing Scenarios	Risk Management Measures
Due to eye irritating properties of the substance: Use suitable eye protection [PPE26]. Avoid skin contact.	
PROC 1 Continuous process [CS54]. Batch process [CS55]. General exposures (closed systems) [CS15]. Process sampling [CS2]. Material transfers [CS3].	No specific measures identified [EI18]. Recommendation: Ensure the system is closed; Clear transfer lines prior to de-coupling [E39]; Drain down and flush system prior to equipment break-in or maintenance [E55].
PROC 2 Continuous process [CS54]. General exposures [CS1]. Material transfers [CS3] (closed systems) [CS107]. Process sampling [CS2] (open systems) [CS108];	No specific measures identified [EI18]. Recommendation: Ensure the system is closed. Clear transfer lines prior to de-coupling [E39]. Clear spills immediately [C&H13].
PROC 3 Use in contained batch processes [CS37]; General exposures (closed systems) [CS15]. Material transfers [CS3].	No specific measures identified [EI18]. Recommendation: Ensure the system is closed; Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13].
PROC 4 Batch process [CS55]. General exposures (open systems) [CS16]. Material transfers [CS3]. Drum/batch transfers [CS8]. Bulk transfers [CS14].	>5%: Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. Recommendation: Use bulk or semi-bulk handling systems [E43]; Use drum pumps [E53]. Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].
PROC 8a Non-dedicated facility [CS82]; General exposures (open systems) [CS16]. Material transfers [CS3].	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Recommendation: Use bulk or semi-bulk handling systems [E43]; Use drum pumps [E53]. Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13]
PROC 8b Dedicated facility [CS81]; General exposures	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee

ES3: Industrial use of Sodium thiocyanate as an intermediate or in synthesis 100% solid and 50% in an aqueous solution
CAS: 540-72-7

(open systems) [CS16]. Material transfers [CS3].	training [PPE16]. Recommendation: <i>Use bulk or semi-bulk handling systems [E43]; Use drum pumps [E53]; Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].</i>
PROC10 Rolling, Brushing [CS51] (open systems) [CS108]; Roller, spreader, flow application [CS98]; General exposures [CS1]; Equipment cleaning and maintenance [CS39].	Limit the substance content in the product to 25% [OC17] and Wear chemically resistant gloves (tested to EN374) in combination with specific employee training [PPE17]. Recommendation <i>Use long handled tools where possible [E50]; Clean equipment and the work area every day [C&H3]; Clear spills immediately [C&H13]; Avoid splashing [C&H15].</i>
PROC 15 Laboratory activities [CS36]. Small scale [CS61]. Manual [CS34].	No specific measures identified [EI18].
Section 2.2	Control of environmental exposure
Product characteristics	Non-hydrophobic [PrC4b]. Readily biodegradable [PrC5a].
Frequency and duration of use	Continuous release. [FD2] Emission Days (days/year): 300 [FD4].
Other Operational Conditions of use affecting environmental exposure	Product applied in aqueous process solution with negligible volatilization [OOC23]. Local freshwater dilution factor: 10 [EF1]. Local marine water dilution factor: 100 [EF2]; Spent process fluid discharged to wastewater. [OOC19]
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Spent process fluid discharged to wastewater. [OOC19]
Organization measures to prevent/limit release from site	Not applicable
Conditions and measures related to municipal sewage treatment plant	Not applicable
Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]
Conditions and measures related to external recovery of waste	Not applicable
Other environmental control measures additional to above	Not applicable
Section 3	Exposure Estimation
3.1. Health.	
Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS when the operational conditions/risk management measures given in section 2 are implemented [G29])	
3.2. Environment	Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented [G29]
Section 4	Guidance to check compliance with the Exposure Scenario
4.1. Health	

ES3: Industrial use of Sodium thiocyanate as an intermediate or in synthesis 100% solid and 50% in an aqueous solution

CAS: 540-72-7

The ECETOC TRA tool has been used to estimate workplace exposure unless otherwise indicated [G21] version2.0

4.2. Environment

EUSES 2.1 has been used to estimate environmental exposure [EE3] unless otherwise indicated.

Section 5

Additional good practice advice beyond the REACH Chemical Safety Assessment

Control of Worker Exposure

Cleaning [CS47]

Clear spills immediately [C&H13]: Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17] and Use suitable eye protection [PPE26]

Emptying bags

In case the solid substance is lumpy or is one big lump crush the substance carefully in a sealed/closed (plastic) bag. Avoid any breakage of the bag during handling.

Use of PPE

Skin protection:

Gloves take attention to the breakthrough time of NaSCN Train the employees how to put on and off the gloves and how to use gloves in a proper way.

Respiratory protection:

Respirators: - Wear a disposable mask only once
 - Clean the non-disposable masks after every use and storage in a clean box and area.

Preferable to wear respirators ≤ 2 hours a day.

ES4: Use in spraying formulations (aqueous solution)

1 Description of ES4

ES4: Industrial and professional use of Sodium thiocyanate in spraying formulations (aqueous solution) CAS: 540-72-7

Section 1	Exposure scenario Title
Title	Industrial and professional use of NaSCN in a spraying aqueous formulation (low pressure spraying).
Use Descriptor	Sector of Use Industrial and Professional: SU3, SU22;
	Process Categories: PROC1, PROC2, PROC3, PROC5, PROC7, PROC8a, PROC8b, PROC10, PROC11, PROC19;
	Environmental Release Categories: ERC4, ERC5, ERC8a
Processes, tasks, activities covered	Covers the use of formulated spraying product including weighing, transfer operations and automated and manual spraying applications.
GES exposure criteria	<p>Worker</p> <p>DNEL (inhalation): 3.00 mg/m³</p> <p>DNEL (skin): 1.68 mg/kg bw/day</p> <p>Not classified as 1 or 2 Carcinogenic Mutagenic and/or Reproduction toxic</p> <p>Environmental PNECs (SCN- equivalent)</p> <p>PNEC aqua (freshwater): 0.095 mg/L</p> <p>PNEC aqua (marine water): 0.0095 mg/L</p> <p>PNEC aqua (intermittent release): 0.0272 mg/L</p> <p>PNEC sediment (freshwater): 0.543 mg/kg sediment dw</p> <p>PNEC sediment (marine water): 0.0543 mg/kg sediment dw</p> <p>PNEC soil: 6.336 mg/kg soil dw</p> <p>PNEC stp: 30 mg/L</p> <p>PNEC oral: 1.667 mg/kg food</p> <p>Not classified as Persistent Bio Accumulation and toxic, nor very Persistent and very Bio accumulating</p>
Section 2	Operational conditions and risk management measures
Section 2.1	Control of worker exposure
Product characteristics	
Physical form of product	Solid, low dustiness [OC1]; Solid, vapor pressure: < 0.01 Pa Aqueous solution, vapor pressure of substance: < 0.01 Pa (completely dissociated) Exposure only by aerosols
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].
Amounts used	Varies between milliliters (sampling) and cubic meters (material transfers) [OC13].
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]
Human factors not influenced by risk management	<i>Not applicable</i>
Other Operational Conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented [G1]. Ensure operatives are trained to minimize exposures [E119].

	Assumes use at not > 20°C above ambient [G15]; Assumes activities are at ambient temperature (unless stated differently) [G17]. Indoor [OC8].
Contributing Scenarios	Risk Management Measures
<p><i>Due to eye irritating properties of the substance: Use suitable eye protection [PPE26].</i></p> <p><i>Avoid skin contact.</i></p>	
PROC1 (industrial) General exposures (closed systems) [CS15]; e.g.: Material transfers [CS3] (closed systems) [CS107]; Spraying [CS10] (closed systems) [CS107]; E.g: Spraying by robots	<p>Ensure the system is closed . No specific measures identified [EI18].</p> <p>Recommendation: ; Clear transfer lines prior to de-coupling [E39]; Drain down and flush system prior to equipment break-in or maintenance [E55].</p>
PROC2 (industrial) General exposures [CS1]. Continuous process [CS54]. Automated process with (semi) closed systems [CS93]; Spraying [CS10] (closed systems) [CS107]; E.g: Spraying by robots	<p>Ensure the system is closed No specific measures identified [EI18].</p> <p>Recommendation: Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear transfer lines prior to de-coupling [E39]; Clear spills immediately [C&H13].</p>
PROC3 (industrial) General exposures (closed systems) [CS15]. Use in contained batch processes [CS37]. Spraying [CS10] (closed systems) [CS107]; E.g: Spraying by robots	<p>Ensure the system is closed; No specific measures identified [EI18].</p> <p>Recommendation: Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13].</p>
PROC5: General exposures (open systems) [CS16]. Mixing operations (open systems) [CS30]. Batch process [CS55].	<p>Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>Recommendation: Use drum pumps [E53]. Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13]</p>
PROC7 (industrial low pressure spraying): General exposures (open systems) [CS16].	<p>Limit the substance content in the product to 25% [OC18] And Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17] Plus:</p>

Spraying [CS10]	5-25%: Avoid carrying out operation for more than 4 hours [OC12] Recommendation: <i>Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13]</i>
PROC8a: General exposures (open systems) [CS16]. Non-dedicated facility [CS82]; Material transfers [CS3];	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Recommendation: <i>Use drum pumps [E53]; Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].</i>
PROC8b: General exposures (open systems) [CS16]; Dedicated facility [CS81]. Material transfers [CS3];	> 5%: Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Recommendation: <i>Use drum pumps [E53]. Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].</i>
PROC10 Rolling, Brushing [CS51] (open systems) [CS108]; Roller, spreader, flow application [CS98]; General exposures [CS1]; Equipment cleaning and maintenance [CS39].	Limit the substance content in the product to 25% [OC18] and Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Recommendation: <i>Use long handled tools where possible [E50]; Clean equipment and the work area every day [C&H3]; Clear spills immediately [C&H13]; Avoid splashing [C&H15].</i>
PROC11 (professional low pressure spraying) General exposures (open systems) [CS16]. Spraying [CS10]	Limit the substance content in the product to 25% [OC18] And Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Plus: 5-25%: Avoid carrying out operation for more than 4 hours [OC12] Recommendation: <i>Clean equipment and the work area every day [C&H3]; Clear spills immediately [C&H13];</i>
PROC 19: Manual [CS34]; Mixing operations (open systems) [CS30].	Limit the substance content in the product to 5% [OC17] And Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Recommendation: <i>Stay upwind/keep distance from source [EI22].</i>

	<i>Clear spills immediately [C&H13]. Clean equipment and the work area every day [C&H3].</i>
Section 2.2	Control of environmental exposure
Product characteristics	Non-hydrophobic [PrC4b]. Readily biodegradable [PrC5a].
Frequency and duration of use	Emission Days (days/year): 20 [FD4].
Other Operational Conditions of use affecting environmental exposure	Product applied in aqueous process solution with negligible volatilization [OOC23]. Local freshwater dilution factor: 10 [EF1]. Local marine water dilution factor: 100 [EF2]; Spent process fluid discharged to wastewater. [OOC19]
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Not applicable
Organization measures to prevent/limit release from site	Not applicable
Conditions and measures related to municipal sewage treatment plant	Not applicable
Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]
Conditions and measures related to external recovery of waste	Not applicable
Other environmental control measures additional to above	Not applicable
Section 3	Exposure Estimation
3.1. Health	
Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the eSDS when the operational conditions/risk of management measures given in section 2 are implemented [G29])	
3.2. Environment	Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented [G29]
Section 4	Guidance to check compliance with the Exposure Scenario
4.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21] version 2.0;	
4.2. Environment	EUSES 2.1 has been used to estimate environmental exposure [EE3] unless otherwise indicated.
Section 5	Additional good practice advice beyond the REACH Chemical Safety Assessment
Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37 (4) of REACH.	
Control of Worker Exposure	
Cleaning [CS47]	Clear spills immediately [C&H13]: Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17] and Use suitable eye protection [PPE26]

Use of PPE	<p><u>Skin protection:</u></p> <p>Hand: Gloves take attention to the breakthrough time of NaSCN</p> <p>Body: Wear a disposable coverall with a good level of liquid protection (e.g.: Tyvek). Preferable to wear the coverall ≤ 4 hours a day.</p> <p>Train the employees putting on and off gloves plus coveralls and how to use these PPE in a proper way.</p> <p><u>Respiratory protection:</u></p> <p>Respirators: - Wear a disposable mask only once</p> <p>- Clean the non-disposable masks after every use and storage in a clean box and area.</p> <p>Preferable to wear respirators ≤ 2 hours a day.</p>
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ES5: Use in non spraying formulations

1 ES5: Use in non spraying formulations, -low dustiness

ES5: Industrial and professional use of Sodium thiocyanate in non spraying formulations (solid and in an aqueous solution) CAS: 540-72-7	
Section 1	Exposure scenario Title
Title	Industrial and professional use of NaSCN (low dustiness)
Use Descriptor	Sector of Use Industrial and Professional: SU3, SU22.
	Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC13, PROC14, PROC19;
	Environmental Release Categories: ERC4, ERC5, ERC8a, ERC8b, ERC8c, ERC8d, ERC9a
Processes, tasks, activities covered	Covers the use in all kinds of applications of non spraying formulations including material receipt, storage, preparation and transfer, application by roller and brush, wiping, dip, equipment cleaning, maintenance and laboratory activities.
GES exposure criteria	<p>Worker</p> <p>DNEL (inhalation): 3.00 mg/m³</p> <p>DNEL (skin): 1.68 mg/kg bw/day</p> <p>Not classified as 1 or 2 Carcinogenic Mutagenic and/or Reproduction toxic</p> <p>Environmental PNECs (SCN- equivalent)</p> <p>PNEC aqua (freshwater): 0.095 mg/L</p> <p>PNEC aqua (marine water): 0.0095 mg/L</p> <p>PNEC aqua (intermittent release): 0.0272 mg/L</p> <p>PNEC sediment (freshwater): 0.543 mg/kg sediment dw</p> <p>PNEC sediment (marine water): 0.0543 mg/kg sediment dw</p> <p>PNEC soil: 6.336 mg/kg soil dw</p> <p>PNEC stp: 30 mg/L</p> <p>PNEC oral: 1.667 mg/kg food</p> <p>Not classified as Persistent Bio Accumulation and toxic, nor very Persistent and very Bio accumulating</p>
Section 2	Operational conditions and risk management measures
Section 2.1	Control of worker exposure
Product characteristics	
Physical form of product	Solid, low dustiness [OC1]; Solid, vapor pressure: <<0.01 Pa Aqueous solution, vapor pressure of substance << 0.01 Pa (completely dissociated) Exposure only by aerosols
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].
Amounts used	Varies between milliliters (sampling) and cubic meters (material transfers) [OC13].
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]
Human factors not influenced by risk management	<i>Not applicable</i>

Other Operational Conditions affecting worker exposure	<p>Assumes a good basic standard of occupational hygiene is implemented [G1]. Ensure operatives are trained to minimize exposures [E119].</p> <p>Assumes use at not > 20°C above ambient [G15];</p> <p>Assumes activities are at ambient temperature (unless stated differently) [G17]. Indoor [OC8].</p>
Contributing Scenarios	Risk Management Measures
<p><i>Due to eye irritating properties of the substance: Use suitable eye protection [PPE26].</i></p> <p><i>Avoid skin contact.</i></p>	
<p>PROC1:</p> <p>General exposures (closed systems) [CS15];</p> <p>e.g.: Material transfers [CS3]; Printing [CS11]; Treatment by dipping and pouring [CS35].</p>	<p>No specific measures identified [E18].</p> <p>Recommendation: Ensure the system is closed; <i>Clear transfer lines prior to de-coupling [E39]; Drain down and flush system prior to equipment break-in or maintenance [E55].</i></p>
<p>PROC2:</p> <p>General exposures [CS1]. Continuous process [CS54]. Automated process with (semi) closed systems [CS93];</p> <p>e.g.: Material transfers [CS3]; Printing [CS11]; Treatment by dipping and pouring [CS35];</p>	<p>No specific measures identified [E18].</p> <p>Recommendation: <i>Ensure the system is closed.</i> <i>Clear transfer lines prior to de-coupling [E39]. Clear spills immediately [C&H13].</i></p>
<p>PROC3:</p> <p>General exposures [CS1]. Use in contained batch processes [CS37].</p> <p>e.g.: Material transfers [CS3]; Printing [CS11]; Treatment by dipping and pouring [CS35];</p>	<p>No specific measures identified [E18].</p> <p>Recommendation: <i>Ensure the system is closed;</i> <i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13].</i></p>
<p>PROC4:</p> <p>General exposures (open systems) [CS16]; Batch process [CS55].</p> <p>e.g.: Material transfers [CS3]; Printing [CS11]; Treatment by dipping and pouring [CS35];</p>	<p>> 5%: Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>Recommendation: <i>Use bulk or semi-bulk handling systems [E43]; Use drum pumps [E53].</i> <i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].</i></p>

<p>PROC5: General exposures (open systems) [CS16]. Batch process [CS55].</p> <p>e.g.: Mixing operations [CS30]. Printing [CS108]; Roller, spreader, flow application [CS98]</p>	<p>Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>Recommendation: <i>Use bulk or semi-bulk handling systems [E43]; Use drum pumps [E53]. Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13]</i></p>
<p>PROC8a: General exposures (open systems) [CS16]. Non-dedicated facility [CS82];</p> <p>Material transfers [CS3];</p>	<p>Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>Recommendation: <i>Use bulk or semi-bulk handling systems [E43]; Use drum pumps [E53]; Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].</i></p>
<p>PROC8b: General exposures (open systems) [CS16]; Dedicated facility [CS81].</p> <p>Material transfers [CS3];</p>	<p>> 5%: Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>Recommendation: <i>Use bulk or semi-bulk handling systems [E43]; Use drum pumps [E53]. Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].</i></p>
<p>PROC10 Rolling, Brushing [CS51] (open systems) [CS108]; Roller, spreader, flow application [CS98]; General exposures [CS1];</p> <p>Equipment cleaning and maintenance [CS39].</p>	<p>Limit the substance content in the product to 25% [OC18] and Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>Recommendation: <i>Use long handled tools where possible [E50]; Clean equipment and the work area every day [C&H3]; Clear spills immediately [C&H13]; Avoid splashing [C&H15].</i></p>
<p>PROC 13 General exposures (open systems) [CS16]; Dipping, immersion and pouring [CS4].</p>	<p>Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>Recommendation: <i>Clear spills immediately [C&H13]. Clean equipment and the work area every day [C&H3].</i></p>
<p>PROC14: Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]; General exposures (open systems) [CS16].</p>	<p>> 5%: Wear suitable gloves tested to EN374 [PPE15].</p> <p>Recommendation: <i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13]. Clean equipment and the work area every day [C&H3].</i></p>

PROC 19: Manual [CS34]; Mixing operations (open systems) [CS30].	Limit the substance content in the product to 5% [OC17] And Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Recommendation: Stay upwind/keep distance from source [EI22]. Clear spills immediately [C&H13]. Clean equipment and the work area every day [C&H3].
Section 2.2	Control of environmental exposure
Product characteristics	Non-hydrophobic [PrC4b]. Readily biodegradable [PrC5a].
Frequency and duration of use	Emission Days (days/year): 100 [FD4].
Other Operational Conditions of use affecting environmental exposure	Product applied in aqueous process solution with negligible volatilization [OOC23]. Local freshwater dilution factor: 10 [EF1]. Local marine water dilution factor: 100 [EF2]; Spent process fluid discharged to wastewater. [OOC19]
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Not applicable
Organization measures to prevent/limit release from site	Not applicable
Conditions and measures related to municipal sewage treatment plant	Not applicable
Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]
Conditions and measures related to external recovery of waste	Not applicable
Other environmental control measures additional to above	Not applicable
Section 3	Exposure Estimation
3.1. Health	
Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the eSDS when the operational conditions/risk of management measures given in section 2 are implemented [G29]	
3.2. Environment	Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented [G29]
Section 4	Guidance to check compliance with the Exposure Scenario
4.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21] version 2.0;	
4.2. Environment	EUSES 2.1 has been used to estimate environmental exposure [EE3] unless otherwise indicated.
Section 5	Additional good practice advice beyond the REACH Chemical Safety Assessment
Control of Worker Exposure	

Cleaning [CS47]	Clear spills immediately [C&H13]: Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17] and Use suitable eye protection [PPE26]
Use of PPE	<p><u>Skin protection:</u> Gloves take attention to the breakthrough time of NaSCN Train the employees putting on and off the gloves, and how to use gloves in a proper way.</p> <p><u>Respiratory protection:</u> Respirators: - Wear a disposable mask only once - Clean the non-disposable masks after every use and storage in a clean box and area. Preferable to wear respirators ≤ 2 hours a day.</p>

2 ES5: Use in non-spraying formulations, medium dustiness

ES5: Industrial and Professional end use of non-spraying formulations $\leq 25\%$ of Sodium thiocyanate solid (formulated product: high dustiness) CAS: 540-72-7	
Section 1	Exposure scenario Title
Title	Industrial and Professional end-use of solid NaSCN (high dustiness).
Use Descriptor	Sector of Use: Industrial (SU3, SU8, SU9, SU10)
	Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC13, PROC14, PROC19;
	Environmental Release Categories: ERC2
Processes, tasks, activities covered	Covers the use in all kinds of applications of non spraying formulations including material receipt, storage, preparation and transfer, application by roller and brush, wiping, dipping, mixing.
GES exposure criteria	<p>Worker DNEL (inhalation): 3.00 mg/m^3 DNEL (skin): $1.68 \text{ mg/kg bw/day}$ Not classified as 1 or 2 Carcinogenic Mutagenic and/or Reproduction toxic</p> <p>Environmental PNECs (SCN- equivalent) PNEC aqua (freshwater): 0.095 mg/L PNEC aqua (marine water): 0.0095 mg/L PNEC aqua (intermittent release): 0.0272 mg/L PNEC sediment (freshwater): $0.543 \text{ mg/kg sediment dw}$ PNEC sediment (marine water): $0.0543 \text{ mg/kg sediment dw}$ PNEC soil: $6.336 \text{ mg/kg soil dw}$ PNEC stp: 30 mg/L PNEC oral: 1.667 mg/kg food Not classified as Persistent Bio Accumulation and toxic, nor very Persistent and very Bio accumulating</p>
Section 2	Operational conditions and risk management measures
Section 2.1	Control of worker exposure
Product characteristics	
Physical form of product	Solid, high dustiness [OC6].
Concentration of substance in product	Covers percentage substance in the product up to 25 % (unless stated differently) [G12].
Amounts used	Varies between milliliters (sampling) and cubic meters (material transfers) [OC13].

Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]
Human factors not influenced by risk management	<i>Not applicable</i>
Other Operational Conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented [G1]. Ensure operatives are trained to minimize exposures [E119]. Assumes use at not > 20°C above ambient [G15]; Assumes activities are at ambient temperature (unless stated differently) [G17]. Indoor [OC8].
Contributing Scenarios	Risk Management Measures
<p><i>Due to eye irritating properties of the substance: Use suitable eye protection [PPE26].</i></p> <p><i>Avoid skin contact</i></p> <p>Covers percentage substance in the product up to 25 % (unless stated differently) [G12].</p>	
PROC1: General exposures (closed systems) [CS15]. Material transfers [CS3]. Mixing operations (closed systems) [CS29]. Process sampling [CS2] (closed systems) [CS107]	up to 100%: No specific measures identified [E118]. Recommendation: <i>Ensure the system is closed. Drain down and flush system prior to equipment break-in or maintenance [E55].</i>
PROC2: General exposures (closed systems) [CS15]; Material transfers [CS3]; Mixing operations (closed systems) [CS29]; Process sampling [CS2] (open systems) [CS108].	<u>Professional worker</u> 5-25%: Avoid carrying out operation for more than 4 hours [OC12] And Wear suitable gloves tested to EN374 [PPE15] Recommendation: <i>Handle substance within a closed system [E47]. Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13].</i>
PROC3: General exposures (closed systems) [CS15]; Use in contained batch processes [CS37]; Material transfers [CS3]; Mixing operations (closed systems) [CS29]. Process sampling [CS2] (open systems) [CS108].	<u>Professional worker</u> 5-25%: Avoid carrying out operation for more than 4 hours [OC12] Recommendation: <i>Ensure the system is closed; Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13].</i>
PROC4: General exposures [CS1]; Batch process [CS55] (open systems) [CS108]	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. Plus: <u>Industrial worker</u> 5-25%: Ensure material transfers are under containment or extract ventilation [E66] or Provide extract ventilation to material transfer points and other openings [E82]. (Efficiency: ≥ 90%) Or Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29] (Protection Factor ≥ 10). <5%: Wear a disposable mask FFP1 (Assigned Protection Factor: 4) or better And avoid

	<p>carrying out operation for more than 4 hours [OC12] Or Avoid carrying out operation for more than 1 hour [OC11]</p> <p><u>Professional worker</u></p> <p>5-25%: Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29] (Protection Factor ≥ 10) And avoid carrying out operation for more than 4 hours [OC12]</p> <p><5%: Wear a disposable mask FFP1 (Assigned Protection Factor: 4) or better And avoid carrying out operation for more than 4 hours [OC12] Or Avoid carrying out operation for more than 1 hour [OC11]</p> <p>Recommendation:</p> <p><i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13]. Clean equipment and the work area every day [C&H3].</i></p>
<p>PROC5:</p> <p>General exposures [CS1];</p> <p>Mixing operations (open systems) [CS30]; Batch process [CS55];</p>	<p>Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p><u>Industrial worker</u></p> <p>5-25%: Ensure material transfers are under containment or extract ventilation [E66] or Provide extract ventilation to material transfer points and other openings [E82]. (Efficiency: $\geq 90\%$) Or Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29] (Protection Factor ≥ 10).</p> <p><5%: Wear a disposable mask FFP1 (Assigned Protection Factor: 4) or better And avoid carrying out operation for more than 4 hours [OC12] Or Avoid carrying out operation for more than 1 hour [OC11]</p> <p><u>Professional worker</u></p> <p>5-25%: Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29] (Protection Factor ≥ 10) And avoid carrying out operation for more than 4 hours [OC12]</p> <p><5%: Wear a disposable mask FFP1 (Assigned Protection Factor: 4) or better And avoid carrying out operation for more than 4 hours [OC12] Or Avoid carrying out operation for more than 1 hour [OC11]</p> <p>Recommendation:</p> <p><i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13]. Clean equipment and the work area every day [C&H3].</i></p>
<p>PROC8a:</p> <p>General exposures [CS1].</p> <p>Non-dedicated facility [CS82]</p> <p>Material transfers [CS3];</p>	<p>Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>5-25%: Ensure material transfers are under containment or extract ventilation [E66] or Provide extract ventilation to material transfer points and other openings [E82] (Efficiency: $\geq 80\%$) And Avoid carrying out operation for more than 1 hour [OC11] Or Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29] (Protection Factor ≥ 10). Avoid carrying out operation for more than 4 hours [OC12].</p> <p><5%: Ensure material transfers are under containment or extract ventilation [E66] or Provide extract ventilation to material transfer points and other openings [E82]</p>

	<p>(Efficiency: $\geq 80\%$) Or Wear a disposable mask FFP1 (Assigned Protection Factor: 4) or better And avoid carrying out operation for more than 4 hours [OC12] Or Avoid carrying out operation for more than 1 hour [OC11]</p> <p>Recommendation: <i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13]. Clean equipment and the work area every day [C&H3].</i></p>
<p>PROC8b: General exposures [CS1]. Dedicated facility [CS81] Material transfers [CS3];</p>	<p>Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. Plus:</p> <p><u>Industrial worker</u> 5-25%: Ensure material transfers are under containment or extract ventilation [E66] or Provide extract ventilation to material transfer points and other openings [E82]. (Efficiency: $\geq 90\%$) Or Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29] (Protection Factor ≥ 10). <5%: Wear a disposable mask FFP1 (Assigned Protection Factor: 4) or better And avoid carrying out operation for more than 4 hours [OC12] Or Avoid carrying out operation for more than 1 hour [OC11]</p> <p><u>Professional worker</u> 5-25%: Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29] (Protection Factor ≥ 10) better And avoid carrying out operation for more than 4 hours [OC12]. <5%: Wear a disposable mask FFP1 (Assigned Protection Factor: 4) or better And avoid carrying out operation for more than 4 hours [OC12] Or Avoid carrying out operation for more than 1 hour [OC11]</p> <p>Recommendation: <i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]; Clear spills immediately [C&H13].</i></p>
<p>PROC13: Treatment of articles by dipping and pouring</p>	<p>Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Plus:</p> <p>5-25%: Avoid carrying out operation for more than 4 hour [OC12].</p>
<p>PROC14: General exposures (open systems) [CS16]; Production or preparation of articles by tableting, compression, extrusion or pelletisation [CS100].</p>	<p>Wear suitable gloves tested to EN374 [PPE15]. Plus:</p> <p><u>Industrial worker</u> 5-25%: Provide extract ventilation to material transfer points and other openings [E82]; Ensure material transfers are under containment or extract ventilation [E66]. (Efficiency: $\geq 90\%$) Or Avoid carrying out operation for more than 4 hours [OC12] and Wear a disposable dust mask (FFP1, Assigned Protection Factor: 4) or better Or Avoid carrying out operation for more than 1 hour [OC11]</p> <p><u>Professional worker</u> 5-25%: Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29]</p>

	<p>(Protection Factor ≥ 10) better And avoid carrying out operation for more than 4 hours [OC12].</p> <p><5%: Wear a disposable mask FFP1 (Assigned Protection Factor: 4) or better And avoid carrying out operation for more than 4 hours [OC12] Or Avoid carrying out operation for more than 1 hour [OC11]</p> <p>Recommendation: Clear spills immediately [C&H13]; Clean equipment and the work area every day [C&H3].</p>
PROC 19: Manual [CS34]; Mixing operations (open systems) [CS30].	<p>Limit the substance content in the product to 5% [OC17] And Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29] (Protection Factor ≥ 10). Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Plus:</p> <p><u>Industrial worker</u> Avoid carrying out operation for more than 4 hours [OC12]</p> <p><u>Professional worker</u> Avoid carrying out operation for more than 1 hour [OC11]</p> <p>Recommendation: Clear spills immediately [C&H13]. Clean equipment and the work area every day [C&H3].</p>
Section 2.2	Control of environmental exposure
Product characteristics	Non-hydrophobic [PrC4b]. Readily biodegradable [PrC5a].
Frequency and duration of use	Continuous release. [FD2] Emission Days (days/year): 300 [FD4].
Other Operational Conditions of use affecting environmental exposure	Product applied in aqueous process solution with negligible volatilization [OOC23]. Local freshwater dilution factor: 10 [EF1]. Local marine water dilution factor: 100 [EF2]; Spent process fluid discharged to wastewater. [OOC19]
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Spent process fluid discharged to wastewater. [OOC19]
Organization measures to prevent/limit release from site	Not applicable
Conditions and measures related to municipal sewage treatment plant	Not applicable
Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]
Conditions and measures related to external recovery of waste	Not applicable
Other environmental control measures additional to above	Not applicable
Section 3	Exposure Estimation
3.1. Health	
Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the eSDS when the operational conditions/risk of management measures given in section 2 are implemented [G29])	
3.2. Environment	Predicted exposures are not expected to exceed the applicable exposure limits when the

	operational conditions/risk management measures given in section 2 are implemented [G29]
Section 4	Guidance to check compliance with the Exposure Scenario
4.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21] version 2.0	
4.2. Environment	EUSES 2.1 has been used to estimate environmental exposure [EE3] unless otherwise indicated.
Section 5	Additional good practice advice beyond the REACH Chemical Safety Assessment
Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37 (4) of REACH.	
Control of Worker Exposure	
Cleaning [CS47]	Clear spills immediately [C&H13]; Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17] and Use suitable eye protection [PPE26]
Use of PPE	<u>Skin protection:</u> Gloves take attention to the breakthrough time of NaSCN. Train the employees how to put on and off the gloves, and how to use gloves in a proper way. <u>Respiratory protection:</u> Respirators: - Wear a disposable mask only once - Clean the non-disposable masks after every use and storage in a clean box and area. Preferable to wear respirators ≤ 2 hours a day.

ES6: Use in building and construction

Description of ES 6

ES6: Industrial and professional use of Sodium thiocyanate in formulations in building and construction (solid and in an aqueous solution) CAS: 540-72-7	
Section 1	Exposure scenario Title
Title	Industrial and professional use of NaSCN formulations in building and construction products (low dustiness)
Use Descriptor	Sector of Use Industrial and Professional: SU3, SU22; SU19
	Process Categories: PROC5, PROC8a, PROC8b, PROC10, PROC14, PROC19; PROC24a
	Environmental Release Categories: EFCC spERC 5.1a.v1, 8c.1a.v1, 8f.1a.v1
Processes, tasks, activities covered	Covers the use of formulations in the building and construction, material transfers, application by rolling, brushing, wiping, tableting, compression, cutting, drilling, equipment cleaning.
GES exposure criteria	<p>Worker</p> <p>DNEL (inhalation): 3.00 mg/m³</p> <p>DNEL (skin): 1.68 mg/kg bw/day</p> <p>Not classified as 1 or 2 Carcinogenic Mutagenic and/or Reproduction toxic</p> <p>Environmental PNECs (SCN- equivalent)</p> <p>PNEC aqua (freshwater): 0.095 mg/L</p> <p>PNEC aqua (marine water): 0.0095 mg/L</p> <p>PNEC aqua (intermittent release): 0.0272 mg/L</p> <p>PNEC sediment (freshwater): 0.543 mg/kg sediment dw</p> <p>PNEC sediment (marine water): 0.0543 mg/kg sediment dw</p> <p>PNEC soil: 6.336 mg/kg soil dw</p> <p>PNEC stp: 30 mg/L</p> <p>PNEC oral: 1.667 mg/kg food</p> <p>Not classified as Persistent Bio Accumulation and toxic, nor very Persistent and very Bio accumulating</p>
Section 2	Operational conditions and risk management measures
Section 2.1	Control of worker exposure
Product characteristics	
Physical form of product	Solid, low dustiness [OC1]; Solid, vapor pressure: <<0.01 Pa Aqueous solution, vapor pressure of substance << 0.01 Pa (completely dissociated) Exposure by aerosols
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].
Amounts used	Varies between milliliters (sampling) and cubic meters (material transfers) [OC13].
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]
Human factors not influenced by risk management	<i>Not applicable</i>

Other Operational Conditions affecting worker exposure	<p>Assumes a good basic standard of occupational hygiene is implemented [G1]. Ensure operatives are trained to minimize exposures [E119].</p> <p>Assumes use at not > 20°C above ambient [G15];</p> <p>Assumes activities are at ambient temperature (unless stated differently) [G17].</p> <p>Indoor [OC8].</p>
Contributing Scenarios	Risk Management Measures
<p><i>Due to eye irritating properties of the substance: Use suitable eye protection [PPE26].</i></p> <p><i>Avoid skin contact</i></p>	
<p>PROC5:</p> <p>General exposures (open systems) [CS16].</p> <p>Mixing operations (open systems) [CS30]. Batch process [CS55].</p>	<p>Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>Recommendation:</p> <p><i>Use bulk or semi-bulk handling systems [E43]; Use drum pumps [E53].</i></p> <p><i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13]</i></p>
<p>PROC8a:</p> <p>General exposures (open systems) [CS16]. Non-dedicated facility [CS82];</p> <p>Material transfers [CS3];</p>	<p>Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>Recommendation:</p> <p><i>Use bulk or semi-bulk handling systems [E43]; Use drum pumps [E53];</i></p> <p><i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].</i></p>
<p>PROC8b:</p> <p>General exposures (open systems) [CS16]; Dedicated facility [CS81].</p> <p>Material transfers [CS3];</p>	<p>> 5%: Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>Recommendation:</p> <p><i>Use bulk or semi-bulk handling systems [E43]; Use drum pumps [E53].</i></p> <p><i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].</i></p>
<p>PROC10 Rolling, Brushing [CS51] (open systems) [CS108]; Roller, spreader, flow application [CS98]; General exposures [CS1];</p> <p>Equipment cleaning and maintenance [CS39].</p>	<p>Limit the substance content in the product to 25% [OC18] and Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>Recommendation:</p> <p><i>Use long handled tools where possible [E50]; Clean equipment and the work area every day [C&H3]; Clear spills immediately [C&H13]; Avoid splashing [C&H15].</i></p>
<p>PROC14:</p> <p>Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]; General</p>	<p>> 5%: Wear chemically resistant gloves tested to EN374 [PPE15].</p> <p>Recommendation:</p>

exposures (open systems) [CS16].	<i>Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13]. Clean equipment and the work area every day [C&H3].</i>
PROC 19: Manual [CS34]; Mixing operations (open systems) [CS30].	Limit the substance content in the product to 5% [OC17] And Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Recommendation: <i>Stay upwind/keep distance from source [E122]. Clear spills immediately [C&H13]. Clean equipment and the work area every day [C&H3].</i>
PROC24a: e.g.,: Roller, spreader, flow application [CS98]; Drill floor operations [CS116];	> 5%: Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. Plus: <u>Professional worker:</u> > 25%: Avoid carrying out operation for more than 4 hours [OC12] <i>Recommendation:</i> <i>Clean equipment and the work area every day [C&H3].</i>
Section 2.2	Control of environmental exposure
Product characteristics	Non-hydrophobic [PrC4b]. Readily biodegradable [PrC5a].
Frequency and duration of use	Continuous release. [FD2] Emission Days (days/year): 220 (industrial use), 365 (service life) [FD4].
Other Operational Conditions of use affecting environmental exposure	Product applied in aqueous process solution with negligible volatilization [OOC23]. Local freshwater dilution factor: 10 [EF1]. Local marine water dilution factor: 100 [EF2]; Spent process fluid discharged to wastewater. [OOC19]
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Not applicable
Organization measures to prevent/limit release from site	Not applicable
Conditions and measures related to municipal sewage treatment plant	Not applicable
Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]
Conditions and measures related to external recovery of waste	Not applicable
Other environmental control measures additional to above	Not applicable
Section 3	Exposure Estimation
3.1. Health	
Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the eSDS when the operational conditions/risk of management measures given in section 2 are implemented [G29])	

3.2. Environment	Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented [G29]
Section 4	Guidance to check compliance with the Exposure Scenario
4.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21] version 2.0;	
4.2. Environment	EUSES 2.1 has been used to estimate environmental exposure [EE3] unless otherwise indicated.
Section 5	Additional good practice advice beyond the REACH Chemical Safety Assessment
Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37 (4) of REACH.	
Control of Worker Exposure	
Cleaning [CS47]	Clear spills immediately [C&H13]: Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17] and Use suitable eye protection [PPE26]
Use of PPE	<p><u>Skin protection:</u> Gloves take attention to the breakthrough time of NaSCN. Train the employees putting on and off the gloves, and how to use gloves in a proper way.</p> <p><u>Respiratory protection:</u> Respirators: - Wear a disposable mask only once - Clean the non-disposable masks after every use and storage in a clean box and area. Preferable to wear respirators ≤ 2 hours a day.</p>

ES7: Use in laboratory settings

Description of ES7

ES7: Use of solid Sodium thiocyanate in professional laboratory settings (solid and in an aqueous solution) CAS: 540-72-7	
Section 1	Exposure scenario Title
Title	Professional laboratory use of NaSCN (low dustiness)
Use Descriptor	Sector of Use: SU22
	Process Categories: PROC10, PROC15.
	Environmental Release Categories: ERC8a
Processes, tasks, activities covered	Covers the use of the substance within laboratory settings, including material transfers and equipment cleaning.
GES exposure criteria	<p>Worker</p> <p>DNEL (inhalation): 3.00 mg/m³</p> <p>DNEL (skin): 1.68 mg/kg bw/day</p> <p>Not classified as 1 or 2 Carcinogenic Mutagenic and/or Reproduction toxic</p> <p>Environmental PNECs (SCN- equivalent)</p> <p>PNEC aqua (freshwater): 0.095 mg/L</p> <p>PNEC aqua (marine water): 0.0095 mg/L</p> <p>PNEC aqua (intermittent release): 0.0272 mg/L</p> <p>PNEC sediment (freshwater): 0.543 mg/kg sediment dw</p> <p>PNEC sediment (marine water): 0.0543 mg/kg sediment dw</p> <p>PNEC soil: 6.336 mg/kg soil dw</p> <p>PNEC stp: 30 mg/L</p> <p>PNEC oral: 1.667 mg/kg food</p> <p>Not classified as Persistent Bio Accumulation and toxic, nor very Persistent and very Bio accumulating</p>
Section 2	Operational conditions and risk management measures
Section 2.1	Control of worker exposure
Product characteristics	
Physical form of product	Solid, low dustiness [OC1]. Solid, vapor pressure: <<0.01 Pa Aqueous solution, vapor pressure of substance << 0.01 Pa (completely dissociated) Exposure by aerosols
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].
Amounts used	<i>Not applicable</i>
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]
Human factors not influenced by risk management	<i>Not applicable</i>
Other Operational Conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented [G1]. Ensure operatives are trained to minimize exposures [E1119]. Assumes use at not > 20°C above ambient [G15]; Assumes activities are at ambient temperature (unless stated differently) [G17].

ES7: Use of solid Sodium thiocyanate in professional laboratory settings (solid and in an aqueous solution) CAS: 540-72-7	
	Indoor [OC8].
Contributing Scenarios	Risk Management Measures
<i>Due to eye irritating properties of the substance: Use suitable eye protection [PPE26]. Avoid skin contact.</i>	
PROC10 General exposures [CS1]; Rolling, Brushing [CS51]; Wiping [CS50]. Equipment cleaning and maintenance [CS39].	Limit the substance content in the product to 25% [OC18] and Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Recommendation: <i>Use long handled tools where possible [E50]; Clean equipment and the work area every day [C&H3]; Clear spills immediately [C&H13]; Avoid splashing [C&H15].</i>
PROC15: Laboratory activities [CS36]; Small scale [CS61]. Manual [CS34].	No specific measures identified [EI18].
Section 2.2	Control of environmental exposure
Product characteristics	Non-hydrophobic [PrC4b]. Readily biodegradable [PrC5a].
Frequency and duration of use	Emission Days (days/year): 20 [FD4].
Other Operational Conditions of use affecting environmental exposure	Product applied in aqueous process solution with negligible volatilization [OOC23]. Local freshwater dilution factor: 10 [EF1]. Local marine water dilution factor: 100 [EF2]; Spent process fluid discharged to wastewater. [OOC19]
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Not applicable
Organization measures to prevent/limit release from site	Not applicable
Conditions and measures related to municipal sewage treatment plant	Not applicable
Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]
Conditions and measures related to external recovery of waste	Not applicable
Other environmental control measures additional to above	Not applicable
Section 3	Exposure Estimation
3.1. Health	
Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the eSDS when the operational conditions/risk of management measures given in section 2 are implemented [G29])	
3.2. Environment	Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented [G29]
Section 4	Guidance to check compliance with the Exposure Scenario
4.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21] version 2.0;	

ES7: Use of solid Sodium thiocyanate in professional laboratory settings (solid and in an aqueous solution) CAS: 540-72-7

4.2. Environment	EUSES 2.1 has been used to estimate environmental exposure [EE3] unless otherwise indicated.
Section 5	Additional good practice advice beyond the REACH Chemical Safety Assessment
Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37 (4) of REACH.	
Control of Worker Exposure	
Cleaning [CS47]	Clear spills immediately [C&H13]: Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17] and Use suitable eye protection [PPE26]
Use of PPE	<p><u>Skin protection:</u> Gloves take attention to the breakthrough time of NaSCN. Train the employees putting on and off the gloves, and how to use gloves in a proper way.</p> <p><u>Respiratory protection:</u> Respirators: - Wear a disposable mask only once - Clean the non-disposable masks after every use and storage in a clean box and area. Preferable to wear respirators ≤ 2 hours a day.</p>

Appendix 1. Human health/worker exposure estimation

1 The exposure limits of NaSCN.

Reference Values		
DNEL worker - inhalation (long term)	3.00	mg/m ³
DNEL worker - inhalation (short term)	15	mg/m ³
DNEL worker - dermal (long term)	1.68	mg/kg/day

2 The operational conditions of uses of NaSCN

Default Operational Conditions	
frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
other Operational Conditions of use	Assumes use at not > 20°C above ambient Assumes a good basic standard of occupational hygiene is implemented Indoor
physical form of product	Solid (crystals) and in an aqueous solution: vapor pressure of NaSCN in water < 0.01 Pa (dissociation is complete) E.g: Solid and Aqueous solution: vapor pressure of NaSCN <<0.01Pa; exposure by aerosols

3 Overview of the 7 Exposure Scenarios, including the process categories in accordance with the ECHA guidance R12 and the life cycle of use

	1	2	3	4	5	6	7
Processes, tasks, activities covered	Manufacture of NaSCN. <i>Company specific – each company provides its own information for this section</i>	Formulation, packing and re-packing of the substance (including drums and small packs) and his mixtures in batch or continuous operations, including storage, material transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance	Use of NaSCN as an intermediate or process chemical or extraction agent. Includes recycling/recovery, material transfers, storage, maintenance and (un)loading (including road car and bulk container), sampling and associated laboratory activities.	Covers the use of formulated spraying product including weighing, transfer operations and automated and manual spraying applications.	Covers the use in all kinds of applications of non spraying formulations including material receipt, storage, preparation and transfer, application by roller and brush, wiping, dip, equipment cleaning, maintenance and laboratory activities.	Covers the use of formulations in the building and construction, material transfers, application by rolling, brushing, wiping, tableting, compression, cutting, drilling, equipment cleaning	Covers the use of the substance within laboratory settings, including material transfers and equipment cleaning, maintenance and laboratory activities.

		and laboratory activities. Loading (including marine vessel/barge, rail/road car and IBC loading) including its distribution.					
Life Cycle Stage / Sector of Use	<i>Company specific – each company provides its own information for this section</i>	Industrial (SU3, SU8, SU9 ,SU10)	Industrial (SU3, SU8, SU9	Industrial (SU3) and Professional (SU22)	Industrial (SU3) and Professional (SU22)	Industrial (SU3), Professional (SU19, SU22)	Professional (SU22)
Applicable Use Descriptors (PROC or PC)		PROC1, PROC2, PROC3, PROC4, PROC5, PR OC8a, PROC8b, PROC9, PROC10, PROC14, PROC15. PROC19	PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC15	PROC1, PROC2, PROC3, PROC5, PROC7, PROC8a, PROC8b, PROC10, PROC11, PROC19	PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC13, PROC14, PROC19	PROC5, PROC8a, PROC8b, PROC10, PROC14, PROC19, PROC24	PROC10, PROC15

Safety Data Sheet

According to Regulation (EC) No 1907/2006

sodium thiocyanate

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Version 2.0

4 Overview of the general exposure assessment (ECETOC Tra model Version 2) by process category for substance NaSCN as a solid and in an aqueous solution (low dustiness; ≤100%)

Life Cycle Stage / Area of Application	Use Descriptor	Inhalatory exposure							Dermal exposure							Risk Characterization			Risk Management Measures (RMMs)	
	Process Category	TRA Predicted Exposure (mg/m3) - no modifiers	TRA LEV : efficiency (%)	TRA concentration factor	TRA duration factor	TRA RPE factor	Extra exposure modifier: [optional]	Free text - comment to clarify additional modifier (inhalation)	Predicted Exposure -(mg/m3) - modified	TRA Predicted Dermal exposure (mg/kg/d) - no modifiers	TRA Dermal exposure LEV reduction	TRA concentration factor	PPE factor	extra exposure modifier: [optional]	Free text - comment to clarify additional modifier (dermal)	Predicted Dermal Exposure (mg/kg/d) - modified	RCR (inhalation)	RCR (dermal)	RCR (all routes)	RMMs for communication - Consolidate into GES or e-SDS REACH ADVISED: phrase [RMM code] Recommended: {phrase [RMM code].}
SU3; SU22	1 - Use in closed process, no likelihood of exposure	0.01							0.01	0.343						0.34	0.00	0.20	0.21	No specific measures identified [E118]. {Ensure the system is closed}; {Clear transfer lines prior to de-coupling [E39]}.

SU3; SU22	2 - Use in closed process, no likelihood of exposure	0.01						0.01	1.371						1.37	0.00	0.82	0.82	No specific measures identified [E118]. {Ensure the system is closed}; {Clear transfer lines prior to de-coupling [E39]}. {Clear spills immediately [C&H13]}.
SU3; SU22	3 - Use in closed batch process (synthesis or formulation)	0.1						0.10	0.343						0.34	0.03	0.20	0.24	No specific measures identified [E118]. {Ensure the system is closed}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clear spills immediately [C&H13]}.
SU3	4 - Use in batch and other process (synthesis) where opportunity for exposure arises	0.5						0.50	6.857			gloves-basic training			0.69	0.17	0.41	0.57	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. {Use bulk or semi-bulk handling systems [E43]}; {Drain down and flush system prior

																			to equipment break-in or maintenance [E55]].{Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}.
SU3	4 - Use in batch and other process (synthesis) where opportunity for exposure arises	0.5		1-5%				0.10	6.857		1-5%				1.37	0.03	0.82	0.85	Limit the substance content in the product to 5% [OC17]. {Use bulk or semi-bulk handling systems [E43]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]].{Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}.
SU22	4 - Use in batch and other process (synthesis) where opportunity for exposure	1						1.00	6.857			gloves-basic training			0.69	0.33	0.41	0.74	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. {Use bulk or

	arises																		semi-bulk handling systems [E43]]; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU22	4 - Use in batch and other process (synthesis) where opportunity for exposure arises	1		1-5%				0.20	6.857		1-5%				1.37	0.07	0.82	0.88	Limit the substance content in the product to 5% [OC17]. {Use bulk or semi-bulk handling systems [E43]]; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.

SU3	5 -Mixing or blending in batch processes (multistage and/or significant contact)	0.5						0.50	13.714			gloves-specific training			0.69	0.17	0.41	0.57	<p>Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.</p>
SU22	5 -Mixing or blending in batch processes (multistage and/or significant contact)	1						1.00	13.714			gloves-specific training			0.69	0.33	0.41	0.74	<p>Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Drain down and flush system prior to equipment break-in or maintenance</p>

																				[E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU3	7 -Industrial spraying	1		5-25%	1-4 hours				0.36	42.860		5-25%	Gloves-specific training			1.29	0.12	0.77	0.89	Limit the substance content in the product to 25% [OC18]. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. {Clean equipment and the work area every day [C&H3]}. ; {Clear spills immediately [C&H13]}.
SU3	7 -Industrial spraying	1		1-5%					0.20	42.860		1-5%	Gloves-basic training			0.86	0.07	0.51	0.58	Limit the substance content in the product to 5% [OC17]. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. {Clean equipment

																			and the work area every day [C&H3]]. ; {Clear spills immediately [C&H13]].
SU3; SU22	8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	0.5						0.50	13.714			gloves-specific training			0.69	0.17	0.41	0.57	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. ; {Use bulk or semi-bulk handling systems [E43]]; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]]. {Clear spills immediately [C&H13]].
SU3	8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	0.1						0.10	6.857			gloves-basic training			0.69	0.03	0.41	0.44	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. {Use bulk or

																			semi-bulk handling systems [E43]]; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU3	8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	0.1		1-5%				0.02	6.857		1-5%				1.37	0.01	0.82	0.82	Limit the substance content in the product to 5% [OC17]. {Use bulk or semi-bulk handling systems [E43]]; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.

SU22	8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	0.5						0.50	6.857			gloves-basic training			0.69	0.17	0.41	0.57	<p>Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.</p>
SU22	8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	0.5		1-5%				0.10	6.857		1-5%				1.37	0.03	0.82	0.85	<p>Limit the substance content in the product to 5% [OC17].</p> <p>{Drain down and flush system prior to equipment break-in or maintenance [E55]}; {Use bulk or semi-bulk handling systems [E43]}. {Clean equipment</p>

																			and the work area every day [C&H3]]; {Clear spills immediately [C&H13]}.
SU3	9 -Transfer of chemicals into small containers (dedicated filling line)	0.1						0.10	6.857			gloves-basic training			0.69	0.03	0.41	0.44	<p>Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].</p> <p>{Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]]; {Clear spills immediately [C&H13]}.</p>
SU3	9 -Transfer of chemicals into small containers (dedicated filling line)	0.1		1-5%				0.02	6.857		1-5%				1.37	0.01	0.82	0.82	<p>Limit the substance content in the product to 5% [OC17].</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Drain down and flush system prior to equipment</p>

																			break-in or maintenance [E55]]. {Clean equipment and the work area every day [C&H3]]. {Clear spills immediately [C&H13]].
SU22	9 -Transfer of chemicals into small containers (dedicated filling line)	0.5						0.50	6.857			gloves-basic training			0.69	0.17	0.41	0.57	<p>Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].</p> <p>{Drain down and flush system prior to equipment break-in or maintenance [E55]]. {Clean equipment and the work area every day [C&H3]]. {Clear spills immediately [C&H13]].</p>
SU22	9 -Transfer of chemicals into small containers (dedicated filling line)	0.5		1-5%				0.10	6.857		1-5%				1.37	0.03	0.82	0.85	<p>Limit the substance content in the product to 5% [OC17].</p> <p>{Drain down and flush system prior to equipment break-in or</p>

																			maintenance [E55]]. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
S3 S22	10 - Roller application or brushing	0.5		5-25%				0.30	27.4286		5-25%	gloves-specific training			0.82	0.10	0.49	0.59	Limit the substance content in the product to 25% [OC18].Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. {Use long handled tools where possible [E50]}. {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}. ; {Avoid splashing [C&H15]}.
S3 S22	10 - Roller application or brushing	0.5		1-5%				0.10	27.4286		1-5%	gloves			1.10	0.03	0.65	0.69	Limit the substance content in the product to 5% [OC17].Wear suitable gloves tested to EN374

																				[PPE15]. {Use long handled tools where possible [E50]}. {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}. ; {Avoid splashing [C&H15]}
SU22	11 - Non industrial spraying	1		5-25%	1-4 hours				0.36	107.140		5-25%	gloves-intensive controls			1.29	0.12	0.77	0.89	Limit the substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4 hours [OC12] Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls [PPE18]. {Clean equipment and the work area every day [C&H3]}. ; {Clear spills immediately

																				[C&H13]].
SU22	11 - Non industrial spraying	1		1-5%					0.20	107.140		1-5%	Gloves- specific training			1.07	0.07	0.64	0.70	Limit the substance content in the product to 5% [OC17]. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. {Clean equipment and the work area every day [C&H3}}. ; {Clear spills immediately [C&H13}}.
SU3	13 -Treatment of articles by dipping and pouring	0.1							0.10	13.714			Gloves- specific training			0.69	0.03	0.41	0.44	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. {Clean equipment and the work area every day [C&H3}}. ; {Clear spills immediately [C&H13}}.
SU2	13 -Treatment of articles by	0.5							0.50	13.714			Gloves- specific training			0.69	0.17	0.41	0.57	Wear chemically resistant gloves (tested to EN374)

	dipping and pouring																		in combination with specific activity training [PPE17]. {Clean equipment and the work area every day [C&H3]}. ; {Clear spills immediately [C&H13]}.
SU3	14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	0.1						0.10	3.429			gloves			0.69	0.03	0.41	0.44	Wear suitable gloves tested to EN374 [PPE15]. {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU3	14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	0.1		1-5%				0.02	3.429		1-5%				0.69	0.01	0.41	0.41	Limit the substance content in the product to 5% [OC17]. {Drain down and flush system prior to equipment break-in or maintenance

																			[E55]]. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU22	14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	1						1.00	3.429			gloves			0.69	0.33	0.41	0.74	Wear suitable gloves tested to EN374 [PPE15]. {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}.
SU22	14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	1		1-5%				0.20	3.429		1-5%				0.69	0.07	0.41	0.47	Limit the substance content in the product to 5% [OC17]. {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately

																			[C&H13]].
SU3; SU22	15 - Use of laboratory reagents in small scale laboratories	0.1						0.10	0.343						0.34	0.03	0.20	0.24	No specific measures identified [E118].
SU3; SU22	19 - Hand-mixing with intimate contact (only PPE available)	0.5		1-5%				0.10	141.43		1-5%	gloves-specific training			1.41	0.03	0.84	0.88	Limit the substance content in the product to 5% [OC17]. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}; {Stay upwind/keep distance from source [E122]}.
SU3	24a - High (mechanical) energy work-up of substances bound in materials and/or articles - pt<mp - Low	1						1.00	2.829			gloves			0.57	0.33	0.34	0.67	Wear suitable gloves tested to EN374 [PPE15]. {Clean equipment and the work area every day [C&H3]}.

	Fugacity																		
SU3	24a - High (mechanical) energy work-up of substances bound in materials and/or articles - pt<mp - Low Fugacity	1		1-5%				0.20	2.829		1-5%				0.57	0.07	0.34	0.40	Limit the substance content in the product to 5% [OC17]; {Clean equipment and the work area every day [C&H3]}.
SU22	24a - High (mechanical) energy work-up of substances bound in materials and/or articles - pt<mp - Low Fugacity	3			1-4 hours			1.80	2.829			gloves-basic training			0.28	0.60	0.17	0.77	Avoid carrying out operation for more than 4 hours [OC12]; Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. {Clean equipment and the work area every day [C&H3]}.

SU22	24a - High (mechanical) energy work-up of substances bound in materials and/or articles - pt<mp - Low Fugacity	3		5-25%				1.80	2.829		5-25%	gloves-basic training			0.17	0.60	0.10	0.70	Limit the substance content in the product to 25% [OC18]; Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. {Clean equipment and the work area every day [C&H3]}.
SU22	24a - High (mechanical) energy work-up of substances bound in materials and/or articles - pt<mp - Low Fugacity	3		1-5%				0.60	2.829		1-5%				0.57	0.20	0.34	0.54	Limit the substance content in the product to 5% [OC17]; {Clean equipment and the work area every day [C&H3]}.

5 Overview of the general exposure assessment (EcetocECETOC Tra model) by process category for substance NaSCN as a solid formulation (medium dustiness; $\geq 25\%$)

Life Cycle Stage / Area of Application	Use Descriptor	Inhalatory exposure								Dermal exposure								Risk Characterization			Risk Management Measures (RMMs)
	Process Category	TRA Predicted Exposure - (mg/m3) - no modifiers	TRA LEV : efficiency (%)	TRA concentration factor	TRA duration factor	TRA RPE factor	Extra exposure modifier: [optional]	Free text - comment to clarify additional modifier (inhalation)	Predicted Exposure - (mg/m3) - modified	TRA Predicted Dermal exposure (mg/kg/d) - no modifiers	TRA Dermal exposure LEV reduction factor	TRA concentration factor	PPE factor	extra exposure modifier: [optional]	Free text - comment to clarify additional modifier (dermal)	Predicted Dermal Exposure (mg/kg/d) - modified	RCR (inhalation)	RCR (dermal)	RCR (all routes)	RMMs for communication - Consolidate into GES or e-SDS REACH ADVISED: phrase [RMM code] Recommended: {phrase [RMM code].}	
SU3; SU22	1 - Use in closed process, no likelihood of exposure	0.01							0.01	0.343						0.34	0.00	0.20	0.21	No specific measures identified [EI18]. {Ensure the system is closed} {Clear transfer lines prior to de-coupling [E39]}.	
SU3	2 - Use in closed process, no likelihood of	0.5							0.50	1.371			gloves			0.27	0.17	0.16	0.33	Wear suitable gloves tested to EN374 [PPE15]. {Ensure the system is	

	exposure																		closed); {Clear transfer lines prior to de-coupling [E39]}. {Clear spills immediately [C&H13]}.
SU3	2 - Use in closed process, no likelihood of exposure	0.5		5-25%				0.30	1.371		5-25%				0.82	0.10	0.49	0.59	Limit the substance content in the product to 25% [OC18]. {Ensure the system is closed}; {Clear transfer lines prior to de-coupling [E39]}. {Clear spills immediately [C&H13]}.
SU22	2 - Use in closed process, no likelihood of exposure	1						1.00	1.371			gloves			0.27	0.33	0.16	0.50	Wear suitable gloves tested to EN374 [PPE15]. {Ensure the system is closed} {Clear transfer lines prior to de-coupling [E39]}. {Clear spills immediately

																				[C&H13]].
SU22	2 - Use in closed process, no likelihood of exposure	1		5-25%					0.60	1.371		5-25%				0.82	0.20	0.49	0.69	Limit the substance content in the product to 25% [OC18]. {Ensure the system is closed}; {Clear transfer lines prior to de-coupling [E39]}. {Clear spills immediately [C&H13]}.
SU3; SU22	3 - Use in closed batch process (synthesis or formulation)	1							1.00	0.343						0.34	0.33	0.20	0.54	No specific measures identified [EI18]. {Ensure the system is closed}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clear spills immediately [C&H13]}.
SU3; SU22	4 - Use in batch and other	5	80						1.00	6.857			gloves-basic training			0.69	0.33	0.41	0.74	Ensure material transfers are under

process
(synthesis)
where
opportunity
for
exposure
arises

containment or extract ventilation [E66] ; Provide extract ventilation to material transfer points and other openings [E82].Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].

{Use bulk or semi-bulk handling systems [E43]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}.

SU3; SU22	4 - Use in batch and other process (synthesis) where opportunity for exposure arises	5		5-25%	1-4 hours				1.80	6.857		5-25%	gloves-basic training			0.41	0.60	0.24	0.84	<p>Limit the substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4 hours [OC12]; Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}; {Clear</p>
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																				spills immediately [C&H13]}.
SU3; SU22	4 - Use in batch and other process (synthesis) where opportunity for exposure arises	5		1-5%					1.00	6.857		1-5%	gloves			0.27	0.33	0.16	0.50	Limit the substance content in the product to 5% [OC17]; Wear suitable gloves tested to EN374 [PPE15]. {Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.

SU3; SU22	5 -Mixing or blending in batch processes (multistage and/or significant contact)	5	80						1.00	13.714			gloves-spe cific training			0.69	0.33	0.41	0.74	<p>Ensure material transfers are under containment or extract ventilation [E66]; Provide extract ventilation to material transfer points and other openings [E82]. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately</p>
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																				[C&H13]].
SU3; SU22	5 -Mixing or blending in batch processes (multistage and/or significant contact)	5		5-25%	1-4 hours				1.80	13.714		5-25%	gloves-spe cific training			0.41	0.60	0.24	0.84	Limit the substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4 hours [OC12]; Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. {Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area

																			every day [C&H3]]; {Clear spills immediately [C&H13]}.	
SU3; SU22	5 -Mixing or blending in batch processes (multistage and/or significant contact)	5		1-5%					1.00	13.714		1-5%	gloves			0.55	0.33	0.33	0.66	Limit the substance content in the product to 5% [OC17]; Wear suitable gloves tested to EN374 [PPE15]. {Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}; Clear spills immediately [C&H13]}.

SU3; SU22	8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	5	80						1.00	13.714			gloves-spe cific training			0.69	0.33	0.41	0.74	<p>Ensure material transfers are under containment or extract ventilation [E66]; Provide extract ventilation to material transfer points and other openings [E82];. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17];</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}; {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately</p>
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																				[C&H13]].
SU3; SU22	8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	5		5-25%	1-4 hours				1.80	13.714		5-25%	gloves-specific training			0.41	0.60	0.24	0.84	Limit the substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4 hours [OC12]; Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. {Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}; {Clean equipment and the work area every day

																				[C&H3]]; {Clear spills immediately [C&H13]}.
SU3; SU22	8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	5		1-5%					1.00	13.714		1-5%	gloves			0.55	0.33	0.33	0.66	Limit the substance content in the product to 5% [OC17]; Wear suitable gloves tested to EN374 [PPE15]. {Use bulk or semi-bulk handling systems [E43]]; {Discharge sacks via suitable vented charge chute [E44]]; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]]; Clear spills immediately [C&H13]}.
SU3;	8b	5	80						1.00	6.857			gloves-bas			0.69	0.33	0.41	0.74	Ensure material

[illegible]

SU3; SU22	8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	5		5-25%	1-4 hours				1.80	6.857		5-25%	gloves-basic training			0.41	0.60	0.24	0.84	<p>Limit the substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4 hours [OC12;]; Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}; {Clean equipment and the work area every day [C&H3]}; {Clear</p>
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																				spills immediately [C&H13]].
SU3; SU22	8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	5		1-5%					1.00	6.857		1-5%	gloves			0.27	0.33	0.16	0.50	Limit the substance content in the product to 5% [OC17]; Wear suitable gloves tested to EN374 [PPE15]. {Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]].

SU3; SU22	9 -Transfer of chemicals into small containers (dedicated filling line)	5	80						1.00	6.857			gloves-basic training			0.69	0.33	0.41	0.74	<p>Ensure material transfers are under containment or extract ventilation [E66]; Provide extract ventilation to material transfer points and other openings [E82]; Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}; {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately</p>
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																				[C&H13]}.
SU3 SU22	9 -Transfer of chemicals into small containers (dedicated filling line)	5		5-25%	1-4 hours				1.80	6.857		5-25%	gloves-bas ic training			0.41	0.60	0.24	0.84	<p>Limit the substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4 hours [OC12]; Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system</p>

																				prior to equipment break-in or maintenance [E55]]. {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}.
SU3 SU22	9 -Transfer of chemicals into small containers (dedicated filling line)	5		1-5%					1.00	6.857		1-5%	gloves			0.27	0.33	0.16	0.50	Limit the substance content in the product to 5% [OC17]; Wear suitable gloves tested to EN374 [PPE15]. {Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean

																			equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU3	PROC13: General exposures (open systems) [CS16]; Dipping, immersion and pouring [CS4].	1						1.00	13.714			Gloves-specific training			0.69	0.33	0.41	0.74	Wear chemical resistant gloves (tested to EN374) in combination with specific activity training [PPE17] {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}.
SU22	13. General exposures (open systems) [CS16]; Dipping, immersion and pouring [CS4].	5	80					1.00	13.714			gloves-specific training			0.69	0.33	0.41	0.74	Ensure material transfers are under containment or extract ventilation [E66]; Provide extract ventilation to material transfer points and other openings [E82]. Wear chemically resistant gloves

																			(tested to EN374) in combination with specific activity training [PPE17]. {Use bulk or semi-bulk handling systems [E43]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}.	
SU22	13.: General exposures (open systems) [CS16]; Dipping, immersion and pouring [CS4].	5		5-25%	1-4 hours				1.80	13.714		5-25%	gloves-specific training			0.41	0.60	0.24	0.84	Limit the substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4 hours [OC12]; Wear chemically resistant gloves (tested to

																				EN374) in combination with specific activity training [PPE17]. {Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}.
SU22	13.: General exposures (open systems) [CS16]; Dipping, immersion and	5		1-5%					1.00	13.714		1-5%	gloves			0.55	0.33	0.33	0.66	Limit the substance content in the product to 5% [OC17]; Wear suitable gloves tested to EN374 [PPE15].

	pouring [CS4].																			{Use bulk or semi-bulk handling systems [E43]]; {Discharge sacks via suitable vented charge chute [E44]]; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}; Clear spills immediately [C&H13]}.
SU3	14 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation	1							1.00	3.429			gloves			0.69	0.33	0.41	0.74	Wear suitable gloves tested to EN374 [PPE15]. {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}.

SU3	14 - Production of preparation s or articles by tableting, compressi on, extrusion, pelletisatio n	1		1-5%				0.20	3.429		1-5%				0.69	0.07	0.41	0.47	Limit the substance content in the product to 5% [OC17]. {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}.
SU22	14 - Production of preparation s or articles by tableting, compressi on, extrusion, pelletisatio n	5				0.25	FFP1 (APF=4)	1.25	3.429			gloves			0.69	0.42	0.41	0.82	Wear suitable gloves tested to EN374 [PPE15]. Wear a disposable dust mask FFP1 (APF=4) or better {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}. {Avoid carrying out operation for more than 4 hours [OC12]}.
SU22	14 -	5		5-25%	1-4			1.80	3.429		5-25%	gloves			0.41	0.60	0.24	0.84	Limit the

	Production of preparations or articles by tabletting, compression, extrusion, pelletisation				hours															substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4 hours [OC12]; Wear suitable gloves tested to EN374 [PPE15 ; {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}.
SU22	14 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation	5		1-5%					1.00	3.429		1-5%				0.69	0.33	0.41	0.74	Limit the substance content in the product to 5% [OC17]. {Clean equipment and the work area every day [C&H3] ; {Clear spills immediately [C&H13]}.

SU3; SU22	15 - Use of laboratory reagents in small scale laboratories	0.5							0.50	0.343						0.34	0.17	0.20	0.37	No specific measures identified [E118].
SU3; SU22	19 - Hand-mixing with intimate contact (only PPE available)	5		1-5%	15 min-1 hour				0.20	141.43		1-5%	gloves-specific training			1.41	0.07	0.84	0.91	Limit the substance content in the product to 5% [OC17]. Avoid carrying out operation for more than 1 hour [OC11]; Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}; {Stay upwind/keep distance from source [E122]}.

6 Overview of the general exposure assessment (EcetocECETOC Tra model) by process category for substance NaSCN as a solid formulation (high dustiness; $\leq 25\%$).

Life Cycle Stage / Area of Application	Use Descriptor	Inhalatory exposure								Dermal exposure				Risk Characterization			Risk Management Measures (RMMs)
	Process Category	TRA Predicted Exposure - (mg/m ³) - no modifiers	TRA LEV : efficiency (%)	TRA concentration factor	TRA duration factor	TRA RPE factor	Extra exposure modifier: [optional]	Free text - comment to clarify additional modifier (inhalation)	Predicted Exposure - (mg/m ³) - modified	TRA Predicted Dermal exposure (mg/kg/d) - no modifiers	TRA concentration factor	PPE factor	Predicted Dermal Exposure (mg/kg/d) - modified	RCR (inhalation)	RCR (dermal)	RCR (all routes)	RMMs for communication - Consolidate into GES or e-SDS REACH ADVISED: phrase [RMM code] Recommended: {phrase [RMM code].}
SU3	1 - Use in closed process, no likelihood of exposure	0.01							0.01	0.343			0.34	0.00	0.20	0.21	No specific measures identified [E18]. {Ensure the system is closed} {Drain down and flush system prior to equipment break-in or maintenance [E55]}.
SU22	1 - Use in closed process, no likelihood of exposure	0.1							0.10	0.343			0.34	0.03	0.20	0.24	No specific measures identified [E18]. {Ensure the system is closed} {Drain down and flush system prior to equipment break-in or maintenance [E55]}.
SU3	2 - Use in closed process, no likelihood of exposure	1							1.00	1.371		gloves	0.27	0.33	0.16	0.50	Wear suitable gloves tested to EN374 [PPE15]. {Handle substance within a closed system [E47]}. {Drain

																	down and flush system prior to equipment break-in or maintenance [E55]].; {Clear spills immediately [C&H13]}.
SU3	2 - Use in closed process, no likelihood of exposure	1		5-25%					0.60	1.371	5-25%		0.82	0.20	0.49	0.69	Limit the substance content in the product to 25% [OC18]. {Handle substance within a closed system [E47]}. {Drain down and flush system prior to equipment break-in or maintenance [E55]}; {Clear spills immediately [C&H13]}.
SU22	2 - Use in closed process, no likelihood of exposure	5		5-25%	1-4 hours				1.80	1.371	5-25%	gloves	0.16	0.60	0.10	0.70	Limit the substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4 hours [OC12]; Wear suitable gloves tested to EN374 [PPE15]. {Handle substance within a closed system [E47]}. {Drain down and flush system prior to equipment break-in or maintenance [E55]}; {Clear spills immediately [C&H13]}.
SU22	2 - Use in closed process, no likelihood of exposure	5		1-5%					1.00	1.371	1-5%		0.27	0.33	0.16	0.50	Limit the substance content in the product to 5% [OC17]; {Ensure the system is closed}; {Drain down and flush system prior to equipment break-in or

																	maintenance [E55]]; {Clear spills immediately [C&H13]}.
SU3	3 - Use in closed batch process (synthesis or formulation)	1							1.00	0.343			0.34	0.33	0.20	0.54	No specific measures identified [E118]. {Ensure the system is closed} {Drain down and flush system prior to equipment break-in or maintenance [E55]]; {Clear spills immediately [C&H13]}.
SU22	3 - Use in closed batch process (synthesis or formulation)	5		5-25%	1-4 hours				1.80	0.343	5-25%		0.21	0.60	0.12	0.72	Limit the substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4 hours [OC12]; {Ensure the system is closed} {Drain down and flush system prior to equipment break-in or maintenance [E55]]; {Clear spills immediately [C&H13]}.
SU22	3 - Use in closed batch process (synthesis or formulation)	5		1-5%					1.00	0.343	1-5%		0.07	0.33	0.04	0.37	Limit the substance content in the product to 5% [OC17]; {Ensure the system is closed} {Drain down and flush system prior to equipment break-in or maintenance [E55]]; {Clear spills immediately [C&H13]}.

SU3	4 - Use in batch and other process (synthesis) where opportunity for exposure arises	25	90	5-25%					1.50	6.857	5-25%	gloves-basic training	0.41	0.50	0.24	0.74	<p>Limit the substance content in the product to 25% [OC18]. Ensure material transfers are under containment or extract ventilation [E66]. Provide extract ventilation to material transfer points and other openings [E82]. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].</p> <p>{Use bulk or semi-bulk handling systems [E43]}.</p> <p>{Drain down and flush system prior to equipment break-in or maintenance [E55]}.</p> <p>{Clean equipment and the work area every day [C&H3]}.</p> <p>{Clear spills immediately [C&H13]}.</p>
SU3	4 - Use in batch and other process (synthesis) where opportunity for exposure arises	25		5-25%		half mask			1.50	6.857	5-25%	gloves-basic training	0.41	0.50	0.24	0.74	<p>Limit the substance content in the product to 25% [OC18]; Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].;</p> <p>Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29]</p> <p>{Use bulk or semi-bulk handling systems [E43]};</p>

																	{Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}; {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}. {Avoid carrying out operation for more than 4 hours [OC12]}.
SU3	4 - Use in batch and other process (synthesis) where opportunity for exposure arises	25		1-5%	15 min-1 hour				1.00	6.857	1-5%	gloves	0.27	0.33	0.16	0.50	Limit the substance content in the product to 5% [OC17]. Avoid carrying out operation for more than 1 hour [OC11]; Wear suitable gloves tested to EN374 [PPE15]. {Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}; {Clean equipment and the work area every day [C&H3]}.; {Clear spills immediately [C&H13]}.
SU3	4 - Use in batch and other process (synthesis) where	25		1-5%	1-4 hours		0.25	FFP1 (APF=4)	0.75	6.857	1-5%	gloves	0.27	0.25	0.16	0.41	Limit the substance content in the product to 5% [OC17]. Avoid carrying out operation for more than 4 hours [OC12]; Wear a disposable dust mask FFP1 or better;

	opportunity for exposure arises																<p>Wear suitable gloves tested to EN374 [PPE15].</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}; {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}.</p>
SU22	4 - Use in batch and other process (synthesis) where opportunity for exposure arises	50		5-25%	1-4 hours	half mask			1.80	6.857	5-25%	gloves-basic training	0.41	0.60	0.24	0.84	<p>Limit the substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4 hours [OC12]; Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]; Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29];</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}; {Clean equipment</p>

																	and the work area every day [C&H3]]; {Clear spills immediately [C&H13]}.
SU22	4 - Use in batch and other process (synthesis) where opportunity for exposure arises	50		1-5%	15 min-1 hour				2.00	6.857	1-5%	gloves	0.27	0.67	0.16	0.83	<p>Limit the substance content in the product to 5% [OC17]; Avoid carrying out operation for more than 1 hour [OC11]; Wear suitable gloves tested to EN374 [PPE15].</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}; {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}.</p>
SU22	4 - Use in batch and other process (synthesis) where opportunity for exposure arises	50		1-5%	1-4 hours		0.25	FFP1 (APF=4)	1.50	6.857	1-5%	gloves	0.27	0.50	0.16	0.66	<p>Limit the substance content in the product to 5% [OC17]; Avoid carrying out operation for more than 4 hours [OC12]; Wear suitable gloves tested to EN374 [PPE15]. Wear a disposable dust mask FFP1 (APF=4) or better;</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment</p>

																	break-in or maintenance [E55]]; {Clean equipment and the work area every day [C&H3]]; {Clear spills immediately [C&H13]}.
SU3	5 -Mixing or blending in batch processes (multistage and/or significant contact)	25	90	5-25%					1.50	13.714	5-25%	gloves-specific training	0.41	0.50	0.24	0.74	<p>Limit the substance content in the product to 25% [OC18]. Ensure material transfers are under containment or extract ventilation [E66]; Provide extract ventilation to material transfer points and other openings [E82]. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>{Use bulk or semi-bulk handling systems [E43]}. {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.</p>
SU3	5 -Mixing or blending in batch processes (multistage and/or	25		5-25%		half mask			1.50	13.714	5-25%	gloves-specific training	0.41	0.50	0.24	0.74	<p>Limit the substance content in the product to 25% [OC18]. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training</p>

	significant contact)																<p>[PPE17]. ; Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29]</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}. {Avoid carrying out operation for more than 4 hours [OC12]}.</p>
SU3	5 -Mixing or blending in batch processes (multistage and/or significant contact)	25		1-5%	1-4 hours		0.25	FFP1 (APF=4)	0.75	13.714	1-5%	gloves	0.55	0.25	0.33	0.58	<p>Limit the substance content in the product to 5% [OC17]. Avoid carrying out operation for more than 4 hours [OC12]; Wear a disposable dust mask FFP1 (APF1) or better; Wear suitable gloves tested to EN374 [PPE15].</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment</p>

																	and the work area every day [C&H3]]. {Clear spills immediately [C&H13]}.
SU22	5 -Mixing or blending in batch processes (multistage and/or significant contact)	50		5-25%	1-4 hours	half mask			1.80	13.714	5-25%	gloves-specific training	0.41	0.60	0.24	0.84	<p>Limit the substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4 hours [OC12]. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17] ; Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29];</p> <p>{Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}.</p>
SU22	5 -Mixing or blending in batch processes (multistage and/or significant contact)	50		1-5%	15 min-1 hour				2.00	13.714	1-5%	gloves-basic training	0.27	0.67	0.16	0.83	<p>Limit the substance content in the product to 5% [OC17]. Avoid carrying out operation for more than 1 hour [OC11]; Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16];</p>

																	{Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU22	5 -Mixing or blending in batch processes (multistage and/or significant contact)	50		1-5%	1-4 hours		0.25	FFP1 (APF=4)	1.50	13.714	1-5%	gloves	0.55	0.50	0.33	0.83	Limit the substance content in the product to 5% [OC17] .Avoid carrying out operation for more than 4 hours [OC12]; Wear a disposable dust mask FFP1 (APF=4) or better; Wear suitable gloves tested to EN374 [PPE15]. {Use bulk or semi-bulk handling systems [E43]}. {Discharge sacks via suitable vented charge chute [E44]}; Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.

SU3	8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	50	90	5-25%	1-4 hours				1.80	13.714	5-25%	gloves-specific training	0.41	0.60	0.24	0.84	Limit the substance content in the product to 25% [OC18]. Ensure material transfers are under containment or extract ventilation [E66]. Provide extract ventilation to material transfer points and other openings [E82]. Avoid carrying out operation for more than 4 hours [OC12]; Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. {Use bulk or semi-bulk handling systems [E43]}. {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU3	8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	50	90	1-5%					1.80	13.714	5-25%	gloves-specific training	0.41	0.60	0.24	0.84	Limit the substance content in the product to 25% [OC18]. Ensure material transfers are under containment or extract ventilation [E66]. Provide extract ventilation to material transfer points and other openings [E82]. Avoid carrying out operation for more than 4 hours [OC12];

																	<p>Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>{Use bulk or semi-bulk handling systems [E43]}. {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.</p>
SU3; SU22	8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	50		5-25%	1-4 hours	half mask			1.80	13.714	5-25%	gloves-specific training	0.41	0.60	0.24	0.84	<p>Limit the substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4 hours [OC12]; Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. Wear a respirator conforming to EN140 with Type</p>

																	A/P2 filter or better [PPE29] {Use bulk or semi-bulk handling systems [E43]}. {Discharge sacks via suitable vented charge chute [E44]}. {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU3; SU22	8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	50	80	1-5%					2.00	13.714	1-5%	gloves-basic training	0.27	0.67	0.16	0.83	Limit the substance content in the product to 5% [OC17]. Ensure material transfers are under containment or extract ventilation [E66]. Provide extract ventilation to material transfer points and other openings [E82]. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. {Use bulk or semi-bulk handling systems [E43]}. {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}.
SU3;	8a -Transfer	50		1-5%	15				2.00	13.714	1-5%	gloves-basic	0.27	0.67	0.16	0.83	Limit the substance content

SU22	of chemicals from/to vessels/ large containers at non dedicated facilities				min-1 hour							training					in the product to 5% [OC17]. Avoid carrying out operation for more than 1 hour [OC11]; Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]; {Use bulk or semi-bulk handling systems [E43]}. {Discharge sacks via suitable vented charge chute [E44]}. {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU3; SU22	8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	50		1-5%	1-4 hours		0.25	FFP1 (APF=4)	1.50	13.714	1-5%	gloves	0.55	0.50	0.33	0.83	Limit the substance content in the product to 5% [OC17]. Avoid carrying out operation for more than 4 hours [OC12]; Wear a disposable dust mask FFP1 (APF=4) or better; Wear suitable gloves tested to EN374 [PPE15]. {Use bulk or semi-bulk handling systems [E43]}. {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment

																	and the work area every day [C&H3]]; {Clear spills immediately [C&H13]}.
SU3 SU22	8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	50		1-5%		half mask			1.00	13.714	1-5%	gloves	0.55	0.33	0.33	0.66	<p>Limit the substance content in the product to 5% [OC17]. Wear chemically resistant gloves tested to EN374 [PPE15]. Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29].</p> <p>{Use bulk or semi-bulk handling systems [E43]}.</p> <p>{Discharge sacks via suitable vented charge chute [E44]}.</p> <p>{Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.</p>
SU3	8b -Transfer of chemicals from/to vessels/ large containers at dedicated	25	90	5-25%					1.50	6.857	5-25%	gloves-basic training	0.41	0.50	0.24	0.74	<p>Limit the substance content in the product to 25% [OC18]. Ensure material transfers are under containment or extract ventilation [E66]. Provide extract ventilation to material</p>

	facilities																transfer points and other openings [E82].Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. {Use bulk or semi-bulk handling systems [E43]]. {Drain down and flush system prior to equipment break-in or maintenance [E55]]. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU3	8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	25		5-25%		half mask			1.50	6.857	5-25%	gloves-basic training	0.41	0.50	0.24	0.74	Limit the substance content in the product to 25% [OC18]; Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].; Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29] {Use bulk or semi-bulk handling systems [E43]}; {Discharge sacks via suitable vented charge chute [E44]}; {Drain down and flush system prior to equipment break-in or maintenance [E55]}; {Clean equipment and the work area every day

																	[C&H3]]; {Clear spills immediately [C&H13]]. {Avoid carrying out operation for more than 4 hours [OC12]}.
SU3	8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	25		1-5%	15 min-1 hour				1.00	6.857	1-5%	gloves	0.27	0.33	0.16	0.50	Limit the substance content in the product to 5% [OC17]. Avoid carrying out operation for more than 1 hour [OC11]; Wear suitable gloves tested to EN374 [PPE15]. {Use bulk or semi-bulk handling systems [E43]}. {Discharge sacks via suitable vented charge chute [E44]}. {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU3	8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	25		1-5%			0.25	FFP1 (APF=4)	1.25	6.857	1-5%	gloves	0.27	0.42	0.16	0.58	Limit the substance content in the product to 5% [OC17]. Wear a disposable dust mask FFP1 (APF=4) or better; Wear suitable gloves tested to EN374 [PPE15]. {Use bulk or semi-bulk handling systems [E43]}.

																	{Discharge sacks via suitable vented charge chute [E44]}. {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}. {Avoid carrying out operation for more than 4 hours [OC12]}.
SU22	8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	50		5-25%	1-4 hours	half mask			1.80	6.857	5-25%	gloves-basic training	0.41	0.60	0.24	0.84	Limit the substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4 hours [OC12]; Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29]; {Use bulk or semi-bulk handling systems [E43]}. {Discharge sacks via suitable vented charge chute [E44]}. {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}; {Clear spills

																	immediately [C&H13]].
SU22	8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	50		1-5%	15 min-1 hour				2.00	6.857	1-5%	gloves	0.27	0.67	0.16	0.83	<p>Limit the substance content in the product to 5% [OC17]. Avoid carrying out operation for more than 1 hour [OC11]; Wear suitable gloves tested to EN374 [PPE15].</p> <p>{Use bulk or semi-bulk handling systems [E43]}. {Discharge sacks via suitable vented charge chute [E44]}. {Drain down and flush system prior to equipment break-in or maintenance [E55]}. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.</p>
SU22	8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	50		1-5%	1-4 hours		0.25	FFP1 (APF=4)	1.50	6.857	1-5%	gloves	0.27	0.50	0.16	0.66	<p>Limit the substance content in the product to 5% [OC17]. Avoid carrying out operation for more than 4 hours [OC12]; Wear a disposable dust mask FFP1 (APF=4) or better; Wear suitable gloves tested to EN374 [PPE15].</p> <p>{Use bulk or semi-bulk handling systems [E43]}. {Discharge sacks via suitable vented charge chute [E44]}. {Drain down and flush system prior to equipment break-in or maintenance</p>

																	[E55]]. {Clean equipment and the work area every day [C&H3]]. {Clear spills immediately [C&H13]}.
SU3	9 -Transfer of chemicals into small containers (dedicated filling line)	20	90	5-25%					1.20	6.857	5-25%	gloves-basic training	0.41	0.40	0.24	0.64	Limit the substance content in the product to 25% [OC18]. Ensure material transfers are under containment or extract ventilation [E66]; Provide extract ventilation to material transfer points and other openings [E82]. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. {Use bulk or semi-bulk handling systems [E43]}. {Drain down and flush system prior to equipment break-in or maintenance [E55]}.
SU3; SU22	9 -Transfer of chemicals into small containers (dedicated filling line)	20	80	5-25%					1.44	6.857	5-25%	gloves-basic training	0.41	0.48	0.24	0.72	Limit the substance content in the product to 25% [OC18]. Ensure material transfers are under containment or extract ventilation [E66]; Provide extract ventilation to material transfer points and other openings [E82]. Wear chemically resistant gloves (tested to EN374) in combination with 'basic'

																	<p>employee training [PPE16].</p> <p>{Use bulk or semi-bulk handling systems [E43]}.</p> <p>{Discharge sacks via suitable vented charge chute [E44]}.</p> <p>{Drain down and flush system prior to equipment break-in or maintenance [E55]}.</p>
SU3; SU22	9 -Transfer of chemicals into small containers (dedicated filling line)	20		5-25%	1-4 hours		0.25	FFP1 (APF=4)	1.80	6.857	5-25%	gloves-basic training	0.41	0.60	0.24	0.84	<p>Limit the substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4 hours [OC12]; Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. Wear a disposable dust mask FFP1 (APF=4) or better.</p> <p>{Use bulk or semi-bulk handling systems [E43]}.</p> <p>{Discharge sacks via suitable vented charge chute [E44]}.</p> <p>{Drain down and flush system prior to equipment break-in or maintenance [E55]}.</p>

SU3; SU22	9 -Transfer of chemicals into small containers (dedicated filling line)	20		1-5%	1-4 hours				2.40	6.857	1-5%	gloves-basic training	0.14	0.80	0.08	0.88	Limit the substance content in the product to 5% [OC17]. Avoid carrying out operation for more than 4 hours [OC12]; Wear suitable gloves tested to EN374 [PPE15]. {Use bulk or semi-bulk handling systems [E43]}. {Discharge sacks via suitable vented charge chute [E44]}. {Drain down and flush system prior to equipment break-in or maintenance [E55]}.
SU3 SU22	13 -Treatment of articles by dipping and pouring	5		5-25%	1-4 hours				1.80	13.714	5-25%	gloves-specific training	0.41	0.60	0.24	0.84	Limit the substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4 hours [OC12] Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. {Clean equipment and the work area every day [C&H3]}; {Clear spills immediately [C&H13]}.
SU3 SU22	13 -Treatment of articles by dipping and pouring	5		1-5%					1.00	13.714	1-5%	gloves	0.55	0.33	0.33	0.66	Limit the substance content in the product to 5% [OC17]. Wear suitable gloves tested to EN374 [PPE15]. {Clean equipment and the work area every day

																	[C&H3]]; {Clear spills immediately [C&H13]}.
SU3	14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	10	90	5-25%					0.60	3.429	5-25%	gloves	0.41	0.20	0.24	0.44	Limit the substance content in the product to 25% [OC18]. Ensure material transfers are under containment or extract ventilation [E66]. Provide extract ventilation to material transfer points and other openings [E82]. Wear suitable gloves tested to EN374 [PPE15]. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU3	14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	10		5-25%	15 min-1 hour				1.20	3.429	5-25%	gloves	0.41	0.40	0.24	0.64	Limit the substance content in the product to 25% [OC18]. .Avoid carrying out operation for more than 1 hour [OC11]. Wear suitable gloves tested to EN374 [PPE15]. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU3	14 - Production of preparations or articles by	10		5-25%	1-4 hours		0.25	FFP1 (APF=4)	0.90	3.429	5-25%	gloves	0.41	0.30	0.24	0.54	Limit the substance content in the product to 25% [OC18]. Avoid carrying out operation for more than 4

	tableting, compression, extrusion, pelletisation																hours [OC12]; Wear suitable gloves tested to EN374 [PPE15]. Wear a disposable dust mask FFP1 (APF=4) or better. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU3	14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	10		1-5%					2.00	3.429	1-5%	gloves	0.14	0.67	0.08	0.75	Limit the substance content in the product to 5% [OC17]. Wear suitable gloves tested to EN374 [PPE15]. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU22	14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	50		5-25%	1-4 hours	half mask			1.80	3.429	5-25%	gloves	0.41	0.60	0.24	0.84	Limit the substance content in the product to 25% [OC18]. .Avoid carrying out operation for more than 4 hours [OC12]; Wear suitable gloves tested to EN374 [PPE15]. Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29]. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.

SU22	14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	50		1-5%	15 min-1 hour				2.00	3.429	1-5%	gloves	0.14	0.67	0.08	0.75	Limit the substance content in the product to 5% [OC17]. Avoid carrying out operation for more than 1 hour [OC11]; Wear suitable gloves tested to EN374 [PPE15]. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}.
SU3; SU22	15 - Use of laboratory reagents in small scale laboratories	5	80						1.00	0.343			0.34	0.33	0.20	0.54	Handle in a fume cupboard or under extract ventilation [E83].
SU3	19 - Hand-mixing with intimate contact (only PPE available)	25		1-5%	1-4 hours	half mask			0.30	141.429	1-5%	gloves-specific training	1.41	0.10	0.84	0.94	Limit the substance content in the product to 5% [OC17]. Avoid carrying out operation for more than 4 hours [OC12]; Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29]; Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}. {Stay upwind/keep distance from source [EI22]}.

SU22	19 - Hand-mixing with intimate contact (only PPE available	50		1-5%	15 min-1 hour	half mask			0.20	141.429	1-5%	gloves-specific training	1.41	0.07	0.84	0.91	<p>Limit the substance content in the product to 5% [OC17]. Avoid carrying out operation for more than 1 hour [OC11]; Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29]; Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17].</p> <p>{Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}. {Stay upwind/keep distance from source [EI22]}.</p>
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Safety Data Sheet
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sodium thiocyanate

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Appendix 2. Environmental Exposure Estimation and Risk Characterization

Physical chemical parameters/assumptions common to all exposure scenarios

Property	value
Molecular weight (g/mol) SCN ⁻	58.08
Vapor pressure (Pa) (worst case; taken from NH ₄ SCN)	0.015
Water solubility (g/l) (worst case; taken from KSCN)	2300
Log Kow (worst case)	0.58
Chemical class for Koc QSAR	Non-hydrophobics (default QSAR)
STP	Use STP (fresh water and marine)
Biodegradability	Readily biodegradable

PNEC values used in all the exposure scenarios

PNEC	All exposure scenarios
PNEC for aquatic organisms (mg/l)	0.0954
PNEC for marine organisms (mg/l)	0.0095
PNEC for fresh-water sediment organisms (equilibrium partitioning) (mg.kgdwt-1)	0.543
PNEC for marine sediment organisms (equilibrium partitioning) (mg.kgdwt-1)	0.0543
PNEC for terrestrial organisms (equilibrium partitioning) (mg.kgdwt-1)	0.0527
PNEC for secondary poisoning of birds and mammals (mg/kg)	0.229
PNEC for micro-organisms in a STP (mg/l)	30

1 Environment ES 1: Manufacture of NaSCN

The following information is used to calculate PEC values:

Fraction of tonnage released to waste water	8.3E-4
Fraction of main local source	1
Emission days per year	365
Flow rate of the river (m ³ /day)	8.6E+7
Concentration in dry sewage sludge (mg/l)	0
Concentration in surface water during emission episode (mg/l)	7.28E-4

2 Environment ES 2: Distribution and Formulation

The following information is used to calculate PEC values:

Relevant tonnage for application (tonne/year)	15260
Fraction of tonnage released to air (default value for ERC 2)	0.025
Fraction of tonnage released to waste water (default value for ERC 2)	0.02
Fraction of main local source	0.002

Emission days per year	300
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3 Environment ES3: Industrial use in a synthesis and as an intermediate

The following information is used to calculate PEC values:

Relevant tonnage for application (tonne/year)	15260
Fraction of tonnage released to air (default value for ERC 6a)	0.05
Fraction of tonnage released to waste water (default value for ERC 6a)	0.02
Fraction of main local source	0.002
Emission days per year	300

4 Environment ES 4: Use in spraying formulations

The following information is used to calculate PEC values:

Relevant tonnage for application (tonne/year)	1110
Fraction of tonnage released to air (default value for electroplating)	1E-4
Fraction of tonnage released to waste water (default value for electroplating)	0.9
Fraction of tonnage released to industrial soil (default value for electroplating)	5E-3
Fraction of main local source	2E-03
Emission days per year	220

5 Environment ES 5: Use in non spraying formulations

The following information is used to calculate PEC values:

Relevant tonnage for application (tonne/year)	600
Fraction of tonnage released to air	0
Fraction of tonnage released to waste water (default value for ERC 8d)	0.99
Fraction released to industrial soil (default value for ERC 8d)	0.01
Fraction of main local source	0.002
Emission days per year	100

6 Environment ES 6: Use in formulated products in building and construction

The following information is used to calculate PEC values:

Relevant tonnage for application (tonne/year)	15260
Fraction of tonnage released to air (default value for spERC 8f.1a.v1)	0
Fraction of tonnage released to waste water (default value for spERC 8f.1a.v1)	0.01
Fraction of tonnage released to industrial soil (default value for spERC 8f.1a.v1)	0.037
Fraction of main local source	0.002
Emission days per year (industrial use)	220
Emission days per year (service life)	365

7 Environment ES 7: Use in laboratory settings

The following information is used to calculate PEC values:

Relevant tonnage for application (tonne/year)	75
Fraction of tonnage released to waste water (default value for ERC 8a)	1
Fraction of main local source	0.002
Emission days per year	20

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8 Local PEC values for all exposure scenarios

	ES1	ES2	ES3	ES4	ES5	ES6		ES7
	Production	Distribution/formulation	Intermediate/synthesis	Spraying formulations	Non spraying formulations	Building/construction		Lab settings
						Ind. use	Service life	
PEC in surface water (dissolved) (mg/l)	9.23E-03	0.0153	0.0153	0.0938	0.0836	0.0129	0.0109	0.0556
PEC in seawater (dissolved) (mg/l)	Not relevant*	1.47E-3	1.47E-3	9.32E-3	8.3E-3	1.23E-3	2.88E-3	5.5E-3
PEC in air (total) (mg/m ³)	7.28E-10	3.08E-4	7.2E-10	2.36E-8	7.2E-10	7.2E-10	7.2E-10	7.2E-10
PEC in agricultural soil (total) averaged over 30 days (mg.kgdwt-1)	6.65E-03	8.68E-3	8.63E-3	0.0403	0.0362	5.37E-3	4.57E-3	0.0226
PEC in agricultural soil (total) averaged over 180 days (mg.kgdwt-1)	6.65E-03	6.77E-3	6.71E-3	0.0164	0.0151	4.07E-3	3.82E-3	9.33E-3
PEC in grassland (total) averaged over 180 days (mg.kgdwt-1)	6.65E-03	6.29E-3	6.17E-3	9.67E-3	9.21E-3	3.7E-3	3.61E-3	5.6E-3
PEC in pore water of agricultural soils (mg/l)	0.012	0.0139	0.0138	0.0336	0.031	8.34E-3	7.84E-3	0.0191
PEC in pore water of grassland (mg/l)	0.012	0.0129	0.0127	0.0198	0.0189	7.59E-3	7.41E-3	0.0115
PEC in groundwater under agricultural soil (mg/l)	0.012	0.0139	0.0138	0.0336	0.031	8.34E-3	7.84E-3	0.0191
PEC in sediment (total) (mg.kgdwt-1)	0.0526	0.019	0.019	0.116	0.103	0.016	0.0135	0.0689
PEC in seawater sediment (total)	Not relevant*	1.82E-3	1.82E-3	0.0115	0.0103	1.52E-3	3.58E-3	6.81E-3

(mg.kgdwt-1)								
PEC in STP (mg/l)	1.16	0.0682	0.0682	0.853	0.751	0.0465	0.0267	0.474

* The production site is far from the sea shore (Cologne, Germany) and therefore PEC values for the marine environment are not relevant.

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9 Regional PEC values based on production and use of thiocyanate.

Regional PEC s	All exposure scenarios
Regional PEC in surface water (dissolved) (mg/l)	8.51E-04
Regional PEC in seawater (dissolved) (mg/l)	7.9E-04
Regional PEC in air (total) (mg/m ³)	7.22E-10
Regional PEC in agricultural soil (total) (mg.kgdwt-1)	0.0159
Regional PEC in pore water of agricultural soils (mg/l)	0.0287
Regional PEC in natural soil (total) (mg.kgdwt-1)	6.65E-03
Regional PEC in industrial soil (total) (mg.kgdwt-1)	0.138
Regional PEC in sediment (total) (mg.kgdwt-1)	0.0431
Regional PEC in seawater sediment (total) (mg.kgdwt-1)	4.02E-03

10. Risk characterization ratios (environment)

	ES1	ES2	ES3	ES4	ES5	ES6		ES7
	production	Distribution/formulation	Intermediate/ synthesis	Spraying formulations	Non spraying formulations	Building/ construction		Lab settings
						Ind. use	Service life	
RCR for the local fresh-water compartment	0.0909	0.118	0.167	0.676	0.528	0.0927	0.0849	0.135
RCR for the local marine-water compartment	23*	0.112	0.161	0.670	0.523	0.0874	0.150	0.13
RCR for the local soil compartment	5.44-E04	8.53E-04	1.19E-03	4.78E-03	3.74E-03	6.73E-04	6.15E-04	9.71E-04
RCR for the sewage treatment plant	0.438	1.373E-03	2.92E-03	0.0191	0.0144	5.71E-04	3.22E-04	1.93E-03

* This is the only RCR > 1, but is not relevant, as the production site is not close to the sea.