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

1.1 Identificador de 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 o de la mezcla 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:	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: +34 933 770 208 (Sólo disponible en horario de oficina; Lunes-Viernes; 09:00-18:00)

SECCIÓN 2: IDENTIFICACIÓN DE LOS PELIGROS.

2.1 Clasificación de la sustancia o de la mezcla.
Según el Reglamento (EU) No 1272/2008:
Acute Tox. 4 : Nocivo en contacto con la piel.
Acute Tox. 4 : Nocivo en caso de inhalación.
Acute Tox. 4 : Nocivo en caso de ingestión.
Eye Dam. 1 : Provoca lesiones oculares graves.
Aquatic Chronic 3 : Nocivo para los organismos acuáticos, con efectos nocivos duraderos.

2.2 Elementos de la etiqueta.
Etiquetado conforme al Reglamento (EU) No 1272/2008:
Pictogramas:

Palabra de advertencia:
Peligro
Indicaciones de peligro:

H302+H312+H332	Nocivo en caso de ingestión, contacto con la piel o inhalación.
H412	Nocivo para los organismos acuáticos, con efectos nocivos duraderos.
H318	Provoca lesiones oculares graves.

Consejos de prudencia:

P261	Evitar respirar el polvo/el humo/el gas/la niebla/los vapores/el aerosol.
P271	Utilizar únicamente en exteriores o en un lugar bien ventilado.

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P273 Evitar su liberación al medio ambiente.
P280 Llevar guantes/prendas/gafas/máscara de protección.
P301 EN CASO DE INGESTIÓN:
P302+P352 EN CASO DE CONTACTO CON LA PIEL: Lavar con abundante agua
P304+P340 EN CASO DE INHALACIÓN: Transportar a la persona al aire libre y mantenerla en una posición que le facilite la respiración.
P305+P351+P338 EN CASO DE CONTACTO CON LOS OJOS: Enjuagar con agua cuidadosamente durante varios minutos. Quitar las lentes de contacto cuando estén presentes y pueda hacerse con facilidad. Proseguir con el lavado.
P362+P364 Quitar las prendas contaminadas y lavarlas antes de volver a usarlas.
P501 Eliminar el contenido/el recipiente en un tratador autorizado de residuos.

Indicaciones de peligro suplementarias:
EUH032 En contacto con ácidos libera gases muy tóxicos.

2.3 Otros peligros.

La sustancia no es PBT
La sustancia no es mPmB
La sustancia no tiene propiedades de alteración endocrina.

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.

Identificadores	Nombre	Concentración	(*)Clasificación - Reglamento 1272/2008	
			Clasificación	Límites de concentración específicos y Estimación de Toxicidad Aguda
N. CAS: 540-72-7 N. CE: 208-754-4	tiocianato de sodio		Acute Tox. 4, H312 - Acute Tox. 4, H332 - Acute Tox. 4, H302 - Aquatic Chronic 3, H412	-

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.
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).

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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 Corrosivo, el contacto con los ojos o con la piel puede producir quemaduras, la ingestión o la inhalación puede producir daños internos, en el caso de producirse se requiere asistencia médica inmediata.
Producto Nocivo, una exposición prolongada por inhalación puede causar efectos anestésicos y la necesidad de asistencia médica inmediata.
El contacto con los ojos puede producir daños irreversibles.

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.

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 o la mezcla.
Riesgos especiales.
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.
Contener y recoger el vertido con material absorbente inerte (tierra, arena, vermiculita, tierra de diatomeas...) y limpiar la zona inmediatamente con un descontaminante adecuado.
Depositar los residuos en envases cerrados y adecuados para su eliminación, de conformidad con las normativas locales y nacionales (ver sección 13).

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.

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SECCIÓN 7: MANIPULACIÓN Y ALMACENAMIENTO.

7.1 Precauciones para una manipulación segura.
Para la protección personal, ver sección 8.
En la zona de aplicación debe estar prohibido fumar, comer y beber.
Cumplir con la legislación sobre seguridad e higiene en el trabajo.
No emplear nunca presión para vaciar los envases, no son recipientes resistentes a la presión. 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 0 y 40 ºC, 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.

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)	Inhalación, Crónico, Efectos sistémicos	3 (mg/m³)

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.

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 no desechables de protección contra productos químicos

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Características:	Marcado «CE» Categoría III. Se debe revisar la lista de productos químicos frente a los cuales se ha ensayado el guante.
Normas CEN:	EN 374-1, En 374-2, EN 374-3, EN 420
Mantenimiento:	Deberá establecerse un calendario para la sustitución periódica de los guantes a fin de garantizar que se cambien antes de ser permeados por los contaminantes. La utilización de guantes contaminados puede ser más peligrosa que la falta de utilización, debido a que el contaminante puede irse acumulando en el material componente del guante.
Observaciones:	Se sustituirán siempre que se observen roturas, grietas o deformaciones y cuando la suciedad exterior pueda disminuir su resistencia.

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 contra productos químicos
Características:	Marcado «CE» Categoría III. La ropa debe tener un buen ajuste. Se debe fijar el nivel de protección en función un parámetro de ensayo denominado "Tiempo de paso" (BT. Breakthrough Time) el cual indica el tiempo que el producto químico tarda en atravesar el material.
Normas CEN:	EN 464,EN 340, EN 943-1, EN 943-2, EN ISO 6529, EN ISO 6530, EN 13034
Mantenimiento:	Se deben seguir las instrucciones de lavado y conservación proporcionadas por el fabricante para garantiza una protección invariable.
Observaciones:	El diseño de la ropa de protección debería facilitar su posicionamiento correcto y su permanencia sin desplazamiento, durante el período de uso previsto, teniendo el cuenta los factores ambientales, junto con los movimientos y posturas que el usuario pueda adoptar durante su actividad.

EPI:	Calzado de seguridad frente a productos químicos y con propiedades antiestáticas
Características:	Marcado «CE» Categoría III. Se debe revisar la lista de productos químicos frente a los cuales es resistente el calzado.
Normas CEN:	EN ISO 13287, EN 13832-1, EN 13832-2, EN 13832-3, EN ISO 20344, EN ISO 20345
Mantenimiento:	Para el correcto mantenimiento de este tipo de calzado de seguridad es imprescindible tener en cuenta las instrucciones especificadas por el fabricante. El calzado se debe reemplazar ante cualquier indicio de deterioro.
Observaciones:	El calzado se debe limpiar regularmente y secarse cuando esté húmedo pero sin colocarse demasiado cerca de una fuente de calor para evitar el cambio brusco de temperatura.

SECCIÓN 9: PROPIEDADES FÍSICAS Y QUÍMICAS.

9.1 Información sobre propiedades físicas y químicas básicas.
Estado físico: Sólido
Color: Incoloro
Olor: Odorless
Umbral olfativo: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.
Punto de fusión: 308 °C a 101.3 kPa ºC
Punto de congelación: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.
Punto/Punto inicial/intervalo de ebullición: 360 ºC
Inflamabilidad: No
Límite inferior de explosión: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.
Límite superior de explosión: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.
Punto de inflamación: 179 ºC
Temperatura de auto-inflamación: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.
Temperatura de descomposición: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.
pH: 4.8 (100%)
Viscosidad cinemática: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.
Solubilidad: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.
Hidrosolubilidad: 1000 g/L a 20 °C

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Liposolubilidad: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.
Coeficiente de reparto (n-octanol/agua)(valor logaritmico): Log Kow (Log Pow): 2.52
Presión de vapor: <0 Pa
Densidad absoluta: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.
Densidad relativa: 1.76 (20º)
Densidad de vapor: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.
Características de las partículas: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.

9.2 Otros datos.
Viscosidad: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.
Propiedades explosivas: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.
Propiedades comburentes: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.
Punto de gota: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.
Centelleo: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.
% Sólidos: No aplicable/No disponible debido a la naturaleza/las propiedades del producto.

SECCIÓN 10: ESTABILIDAD Y REACTIVIDAD.

10.1 Reactividad.
En contacto con ácidos libera gases muy tóxicos.

10.2 Estabilidad química.
Inestable en contacto con:
- Bases.

10.3 Posibilidad de reacciones peligrosas.
Puede producirse una neutralización en contacto con bases.

10.4 Condiciones que deben evitarse.
- Evitar el contacto con bases.

10.5 Materiales incompatibles.
Evitar los siguientes materiales:
- Bases.

10.6 Productos de descomposición peligrosos.
Dependiendo de las condiciones de uso, pueden generarse los siguientes productos:
- Vapores o gases corrosivos.

SECCIÓN 11: INFORMACIÓN TOXICOLÓGICA.

11.1 Información sobre las clases de peligro definidas en el Reglamento (CE) nº 1272/2008.
No existen datos disponibles ensayados del producto.
Las salpicaduras en los ojos pueden causar irritación y daños reversibles.

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.

Estimación de la toxicidad aguda (ATE):
Sustancias:
ATE (Cutánea) = 1.100 mg/kg
ATE (Oral) = 500 mg/kg

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

c) lesiones oculares graves o irritación ocular;
Producto clasificado:
Lesión ocular grave, Categoría 1: Provoca lesiones oculares graves.

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

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

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.

11.2 Información relativa a otros peligros.

Propiedades de alteración endocrina.
Este producto no contiene componentes con propiedades de alteración endocrina con efectos sobre la salud humana.
Otros datos.
No existe información disponible sobre otros efectos adversos para la salud.

SECCIÓN 12: INFORMACIÓN ECOLÓGICA.

12.1 Toxicidad.
No se dispone de información relativa a la Ecotoxicidad.

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 Propiedades de alteración endocrina.
Este producto no contiene componentes con propiedades de alteración endocrina sobre el medio ambiente.

12.7 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.

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SECCIÓN 14: INFORMACIÓN RELATIVA AL TRANSPORTE.

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

14.1 Número ONU o número ID.
No es peligroso en el transporte.

14.2 Designación oficial de transporte de las Naciones Unidas.
Descripción:
ADR/RID: 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.
Transporte por barco, FEm - Fichas de emergencia (F – Incendio, S – Derrames): No aplicable.

14.6 Precauciones particulares para los usuarios.
No es peligroso en el transporte.

14.7 Transporte marítimo a granel con arreglo a los instrumentos de la OMI.
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 o la mezcla.
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.

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.

Clase de contaminante para el agua (Alemania): WGK 1: Poco peligroso para el agua. (Autoclasificado según Reglamento AwSV)

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 Dam. 1 : Lesión ocular grave, Categoría 1

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Modificaciones respecto a la versión anterior:

- Cambios en la información del proveedor (SECCIÓN 1.3).
- Cambio en el teléfono de emergencia (SECCIÓN 1.4).
- Modificación de peligros específicos (SECCIÓN 2.3).
- Modificación en las medidas de lucha contra incendios (SECCIÓN 5.2).
- Modificaciones en las medidas en caso de vertido accidental (SECCIÓN 6.1).
- Modificaciones en las medidas en caso de vertido accidental (SECCIÓN 6.2).
- Modificaciones en las precauciones de manipulación y almacenamiento (SECCIÓN 7.1).
- Modificaciones de los equipos de protección individual (SECCIÓN 8.2).
- Modificación en los valores de las propiedades físico-químicas (SECCIÓN 9).
- Cambio en la clasificación de peligrosidad (SECCIÓN 11.1).
- Modificación de la clasificación ADR/IMDG/ICAO/IATA/RID (SECCIÓN 14).
- Añadidas abreviaturas y acrónimos (SECCIÓN 16).

Clasificación y procedimiento utilizado para determinar la clasificación de las mezclas con arreglo al Reglamento (CE) nº 1272/2008 [CLP]:

Peligros físicos	Conforme a datos obtenidos de los ensayos
Peligros para la salud	Método de cálculo
Peligros para el medio ambiente	Método de cálculo

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

Información sobre el Inventario TSCA (Toxic Substances Control Act) USA:

N. CAS	Nombre	Estado
540-72-7	tiocianato de sodio	Registrada

Inventario DSL de Canadá (Lista de sustancias domésticas): Estado de registro			
N. CAS	**Nombre**	**Estado DSL**	**Estado NDSL**
540-72-7	tiocianato de sodio	Registrada	No

Se dispone de Escenario de Exposición del producto.

Abreviaturas y acrónimos utilizados:
AwSV: Reglamento de Instalaciones para la manipulación de sustancias peligrosas para el agua.
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.
EPI: Equipo de protección personal.
WGK: Clases de peligros para el agua.

Principales referencias bibliográficas y fuentes de datos:
http://eur-lex.europa.eu/homepage.html
http://echa.europa.eu/
Reglamento (UE) 2020/878.
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) 2020/878 DE LA COMISIÓN de 18 de junio de 2020 por el que se modifica el anexo II del Reglamento (CE) n.o 1907/2006 del Parlamento

-Continúa en la página siguiente.-

Europeo y del Consejo, relativo al registro, la evaluación, la autorización y la restricción de las sustancias y mezclas químicas (REACH).

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.

-Fin de la ficha de datos de seguridad.-

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	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 (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	*Not applicable*
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**
Due to eye irritating properties of the substance: Use suitable eye protection [PPE26]. *Avoid skin contact.*	
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:*** *Ensure the system is closed.* *Clear transfer lines prior to de-coupling [E39]. Clear spills immediately [C&H13].*
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:*** *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].*
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): 15260as 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, tabletting, 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	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	*Not applicable*

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]
Contributing Scenarios	**Risk Management Measures**
Due to eye irritating properties of the substance: Use suitable eye protection [PPE26]. *Avoid skin contact.*	
PROC1: General exposures (closed systems) [CS15]. Material transfers [CS3]. Mixing operations (closed systems) [CS29]. Process sampling [CS2] (closed systems) [CS107]	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].*
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 [EI18]. ***Recommendation:*** *Ensure the system is closed.* *Clear transfer lines prior to de-coupling [E39]. Clear spills immediately [C&H13].*
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 [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].*
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:*** *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].*
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:*** *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]
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 tabletting, 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].

	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**
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	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.

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	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, 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	*Not applicable*
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]; Assumes activities are at ambient temperature (unless stated differently) [G17]. Indoor [OC8].
Contributing Scenarios	**Risk Management Measures**
Due to eye irritating properties of the substance: Use suitable eye protection [PPE26]. *Avoid skin contact.*	
PROC1: General exposures (closed systems) [CS15]. Material transfers [CS3]. Mixing operations (closed systems) [CS29]. Process sampling [CS2] (closed systems) [CS107]	No specific measures identified [EI18]. ***Recommendation:*** *Ensure the system is close. Clear transfer lines prior to de-coupling [E39].*
PROC2: General exposures (closed systems) [CS15]; Material transfers [CS3]; Mixing operations (closed systems) [CS29]; Process sampling [CS2] (open systems) [CS108].	>25%: Wear suitable gloves tested to EN374 [PPE15]. ***Recommendation:*** *Ensure the system is close. Clear transfer lines prior to de-coupling [E39]. Clear spills immediately [C&H13].*
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 [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].*
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: 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].
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]

	> 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].*
PROC14: General exposures (open systems) [CS16]; Production or preparation or articles by tabletting, compression, extrusion or pelletisation [CS100].	> 5%: Wear suitable gloves tested to EN374 [PPE15]. ***Recommendation:*** *Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].*
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]; Avoid carrying out operation for more than 1 hour [OC11]; Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. ***Recommendation:*** *Clean equipment and the work area every day [C&H3]. Clear spills immediately [C&H13].*
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 correctly 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.

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

	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, 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	*Not applicable*
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]; Assumes activities are at ambient temperature (unless stated differently) [G17]. Indoor [OC8].
Contributing Scenarios	**Risk Management Measures**
Due to eye irritating properties of the substance: Use suitable eye protection [PPE26]. *Avoid skin contact* ***Covers percentage substance in the product up to 25 % (unless stated differently) [G12].***	
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 [EI18]. ***Recommendation:*** *Ensure the system is closed. Drain down and flush system prior to equipment break-in or maintenance [E55].*
PROC2: General exposures (closed systems) [CS15]; Material transfers [CS3]; Mixing operations (closed systems) [CS29]; Process sampling [CS2] (open systems)	No specific measures identified [EI18]. *Recommendation:* *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].*

[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].	**up to 100%:** 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].*
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: 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 carrying out operation for more than 4 hours [OC12] **Or** Avoid carrying out operation for more than 1 hour [OC11] ***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].*
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]. 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 carrying out operation for more than 4 hours [OC12] ***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].*
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], Plus 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%: 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 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 ***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].*
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%: 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 carrying out operation for more than 4 hours [OC12] **Or** Avoid carrying out operation for more than 1 hour [OC11] ***Recommendation*:** *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%: Provide extract ventilation to material transfer points and other openings [E82]; Ensure material transfers are under containment or extract ventilation [E66] (Efficiency: ≥ 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]. < 5%: Avoid carrying out operation for more than 4 hour [OC12] ***Recommendation:*** *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].*
PROC14: General exposures (open systems) [CS16]; Production or preparation or articles by tabletting, compression, extrusion or pelletisation [CS100].	Wear suitable gloves tested to EN374 [PPE15]. Plus: 5 - 25%: Provide extract ventilation to material transfer points and other openings [E82]; Ensure material transfers are under containment or extract ventilation [E66]. (Efficiency: ≥ 90%) **Or**

	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: ≥ 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 ≤ 2 hours a day.

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

Describtion 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	*Not applicable*

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:*** *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].*
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*** *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].*
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 Describtion 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	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	*Not applicable*
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]; Assumes activities are at ambient temperature (unless stated differently) [G17]. Indoor [OC8].
Contributing Scenarios	**Risk Management Measures**
Due to eye irritating properties of the substance: Use suitable eye protection [PPE26]. *Avoid skin contact.*	
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	Ensure the system is closed . No specific measures identified [EI18]. ***Recommendation:*** ; *Clear transfer lines prior to de-coupling [E39]; Drain down and flush system prior to equipment break-in or maintenance [E55].*
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	*Ensure the system is closed* No specific measures identified [EI18]. ***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].*
PROC3 (industrial) General exposures (closed systems) [CS15]. Use in contained batch processes [CS37]. Spraying [CS10] (closed systems) [CS107]; E.g: Spraying by robots	*Ensure the system is closed;* No specific measures identified [EI18]. ***Recommendation:*** *Drain down and flush system prior to equipment break-in or maintenance [E55]. Clear spills immediately [C&H13].*
PROC5: General exposures (open systems) [CS16]. Mixing operations (open systems) [CS30]. Batch process [CS55].	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. ***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]*
PROC7 (industrial low pressure spraying): General exposures (open systems) [CS16].	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:

Spraying [CS10]	5-25%: Avoid carrying out operation for more than 4 hours [OC12] ***Recommendation:*** *Clean equipment and the work area every day [C&H3].Clear spills immediately [C&H13]*
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:*** *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 (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:*** *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].*
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:*** *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].*
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:*** *Clean equipment and the work area every day [C&H3]; Clear spills immediately [C&H13];*
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): 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	<u>Skin protection:</u> Hand: Gloves take attention to the breakthrough time of NaSCN Body: Wear a disposable coverall with a good level of liquid protection (e.g.: Tyvek). Preferable to wear the coverall ≤ 4 hours a day. Train the employees putting on and off gloves plus coveralls and how to use these PPE 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.

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	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	*Not applicable*

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]; Assumes activities are at ambient temperature (unless stated differently) [G17]. Indoor [OC8].
Contributing Scenarios	**Risk Management Measures**
Due to eye irritating properties of the substance: Use suitable eye protection [PPE26]. *Avoid skin contact.*	
PROC1: General exposures (closed systems) [CS15]; e.g.: Material transfers [CS3]; Printing [CS11]; Treatment by dipping and pouring [CS35].	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].*
PROC2: General exposures [CS1]. Continuous process [CS54]. Automated process with (semi) closed systems [CS93]; e.g.: Material transfers [CS3]; Printing [CS11]; Treatment by dipping and pouring [CS35];	No specific measures identified [EI18]. ***Recommendation:*** *Ensure the system is closed.* *Clear transfer lines prior to de-coupling [E39]. Clear spills immediately [C&H13].*
PROC3: General exposures [CS1]. Use in contained batch processes [CS37]. e.g.: Material transfers [CS3]; Printing [CS11]; Treatment by dipping and pouring [CS35];	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].*
PROC4: General exposures (open systems) [CS16]; Batch process [CS55]. e.g.: Material transfers [CS3]; Printing [CS11]; Treatment by dipping and pouring [CS35];	> 5%: 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].*

PROC5: General exposures (open systems) [CS16]. Batch process [CS55]. e.g.: Mixing operations [CS30]. Printing [CS108]; Roller, spreader, flow application [CS98]	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]*
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:*** *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 (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:*** *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].*
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:*** *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].*
PROC 13 General exposures (open systems) [CS16]; Dipping, immersion and pouring [CS4].	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training [PPE17]. ***Recommendation:*** *Clear spills immediately [C&H13]. Clean equipment and the work area every day [C&H3].*
PROC14: Production or preparation or articles by tabletting, compression, extrusion or pelletisation [CS100]; General exposures (open systems) [CS16].	> 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].*

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	Skin protection: 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. 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.

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

ES5: Industrial and Professional end use of non-spraying formulations ≤ *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	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, 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	*Not applicable*
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]; Assumes activities are at ambient temperature (unless stated differently) [G17]. Indoor [OC8].
Contributing Scenarios	**Risk Management Measures**
Due to eye irritating properties of the substance: Use suitable eye protection [PPE26]. *Avoid skin contact* ***Covers percentage substance in the product up to 25 % (unless stated differently) [G12].***	
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 [EI18]. ***Recommendation:*** *Ensure the system is closed. Drain down and flush system prior to equipment break-in or maintenance [E55].*
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:* *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].*
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:*** *Ensure the system is closed; Drain down and flush system prior to equipment break-in or maintenance [E55}. Clear spills immediately [C&H13].*
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

	carrying out operation for more than 4 hours [OC12] **Or** Avoid carrying out operation for more than 1 hour [OC11] Professional worker 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] <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] ***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].*
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]. Industrial worker 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 carrying out operation for more than 4 hours [OC12] **Or** Avoid carrying out operation for more than 1 hour [OC11] Professional worker 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] <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] ***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].*
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]. 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: ≥ 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]. <5%: Ensure material transfers are under containment or extract ventilation [E66] or Provide extract ventilation to material transfer points and other openings [E82]

	(Efficiency: ≥ 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] ***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].*
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: <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 carrying out operation for more than 4 hours [OC12] **Or** Avoid carrying out operation for more than 1 hour [OC11] <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] ***Recommendation*:** *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].*
PROC13: Treatment of articles by dipping and pouring	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 hour [OC12].
PROC14: General exposures (open systems) [CS16]; Production or preparation or articles by tabletting, compression, extrusion or pelletisation [CS100].	Wear suitable gloves tested to EN374 [PPE15]. Plus: <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: ≥ 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] <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] ***Recommendation:*** *Clear spills immediately [C&H13]; Clean equipment and the work area every day [C&H3].*
PROC 19: Manual [CS34]; Mixing operations (open systems) [CS30].	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: Industrial worker Avoid carrying out operation for more than 4 hours [OC12] Professional worker Avoid carrying out operation for more than 1 hour [OC11] ***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	<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

Describtion 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, tabletting, compression, cutting, drilling, equipment cleaning.
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 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	*Not applicable*

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]; Assumes activities are at ambient temperature (unless stated differently) [G17]. Indoor [OC8].
Contributing Scenarios	**Risk Management Measures**
Due to eye irritating properties of the substance: Use suitable eye protection [PPE26]. *Avoid skin contact*	
PROC5: General exposures (open systems) [CS16]. Mixing operations (open systems) [CS30]. Batch process [CS55].	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]*
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:*** *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 (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:*** *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].*
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:*** *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: Production or preparation or articles by tabletting, compression, extrusion or pelletisation [CS100]; General	> 5%: Wear chemically resistant gloves tested to EN374 [PPE15]. ***Recommendation:***

exposures (open systems) [CS16].	*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].*
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].*
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] *Recommendation:* *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): 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	<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.

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	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 by aerosols
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].
Amounts used	*Not applicable*
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]
Human factors not influenced by risk management	*Not applicable*
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^{o}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**
Due to eye irritating properties of the substance: Use suitable eye protection [PPE26]. *Avoid skin contact.*	
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:*** *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].*
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	Skin protection: 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. 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.

Appendix 1. Human health/worker exposure estimation

1 The exposure limits of NaSCN.

Reference Values		
DNEL worker - inhalation (long term)	3.00	mg/m3
DNEL worker - inhalation (short term)	15	mg/m3
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. *Company specific – each company provides its own information for this section*	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, tabletting, 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, tabletting, 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	*Company specific – each company provides its own information for this section*	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

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 [EI18]. {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 [EI18]. {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 [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	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	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	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	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	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	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]}.
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	Limit the substance content in the product to 5% [OC17]. {Drain down and flush system prior to equipment break-in or maintenance [E55]}; {Use bulk or semi-bulk handling systems [E43]}. {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)	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]. {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	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	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	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	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. {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	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	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]}.
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 tabletting, 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 tabletting, 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 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]. {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 tabletting, 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 [EI18].
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 [EI22]}.
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; ≥ 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	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]. {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	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-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]}.
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-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	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-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]}.
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

SU22	-Transfer of chemicals from/to vessels/ large containers at dedicated facilities												ic training						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; 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	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]. {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	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	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 SU22	9 -Transfer of chemicals into small containers (dedicated filling line)	5		5-25%	1-4 hours				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]. {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		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 preparations or articles by tabletting, 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]. {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					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 [EI18].
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 [EI22]}.

6 Overview of the general exposure assessment (EcetocECETOC Tra model) by process category for substance NaSCN as a solid formulation (high dustiness; ≤ 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 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 [EI18]. {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 [EI18]. {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 [EI18]. {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	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]}. {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	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	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																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]}.
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	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	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	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]}.
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	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; {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	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	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]. {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	25		5-25%		half mask			1.50	13.714	5-25%	gloves-specific 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 specific activity training

	significant contact)															[PPE17]. ; 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	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	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]. {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		5-25%	1-4 hours	half mask			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] ; 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	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	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];

																	{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];

																	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; 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	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] {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	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]. {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	25	90	5-25%					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]. Ensure material transfers are under containment or extract ventilation [E66]. Provide extract ventilation to material

	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	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]}.
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	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	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'

																	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]}.
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	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. {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	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 tabletting, 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 tabletting, 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

	tabletting, 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 tabletting, 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 tabletting, 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 tabletting, 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	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]. {Clean equipment and the work area every day [C&H3]}. {Clear spills immediately [C&H13]}. {Stay upwind/keep distance from source [EI22]}.

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_4SCN)	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

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

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.

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.