

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

LANXESS

Energizing Chemistry

ANDEROL 2100 HTCL

Version	Revision Date:	SDS Number:	Date of last issue: 22.01.2018
1.7	05.10.2020	000000007690	Date of first issue: 21.11.2011

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : ANDEROL 2100 HTCL

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Sub-
stance/Mixture : Lubricant, Raw material for industry

Recommended restrictions
on use : Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet

:

Company:

Manufacturer
Anderol Specialty Lubricants
Groot Egtenrayseweg 23
5928 PA Venlo
Netherlands

Telephone : +31-77 396 0340

Supplier
LANXESS Solutions UK Ltd.
Tenax Road, Trafford Park
Manchester
United Kingdom
M17 1WT

Customer Service:

+44 161 875 3800

Prepared by

Product Safety Department
(US) +1 866-430-2775

Further information for the safety data sheet : MSDSRe-
quest@lanxess.com

1.4 Emergency telephone number

Emergency telephone
number:

+44 (0) 1235 239 670 (NCEC)

For additional emergency telephone numbers see section 16 of
the Safety Data Sheet.

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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Long-term (chronic) aquatic hazard, Category 3 H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard statements : H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P273 Avoid release to the environment.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Additional Labelling

EUH208 Contains N-1-naphthylaniline. May produce an allergic reaction.

The following percentage of the mixture consists of ingredient(s) with unknown acute oral toxicity: 95.464 %

The following percentage of the mixture consists of ingredient(s) with unknown acute dermal toxicity: 95.464 %

The following percentage of the mixture consists of ingredient(s) with unknown acute inhalation toxicity: 95.464 %

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 95.464 %

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
O,O,O-triphenyl phosphorothioate	597-82-0 209-909-9 01-2119979545-21-xxxx	Aquatic Chronic 4; H413	>= 1 - < 2.5
N-1-naphthylaniline	90-30-2 201-983-0	Acute Tox. 4; H302 Skin Sens. 1B; H317	>= 0.25 - < 1

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	01-2119488704-27-xxxx	STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	
		M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- If inhaled : If inhaled
Move to fresh air.
If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.
In case of bluish discolouration (lips, ear lobes, fingernails), give oxygen as quickly as possible.
If symptoms persist, call a physician.
- In case of skin contact : In case of skin contact
Wash off with soap and water.
Remove contaminated clothing and shoes.
Wash contaminated clothing before re-use.
Get medical attention if irritation develops and persists.
- In case of eye contact : In case of eye contact
Rinse thoroughly with plenty of water, also under the eyelids.
If eye irritation persists, consult a specialist.
- If swallowed : If swallowed, DO NOT induce vomiting.
Consult a physician if necessary.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No information available.

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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Carbon dioxide (CO₂)
Dry powder
Foam
Alcohol-resistant foam
Water mist

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Burning produces noxious and toxic fumes.

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

Further information : In the event of fire, cool tanks with water spray.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.
Forms slippery/greasy layers with water.

6.2 Environmental precautions

Environmental precautions : Should not be released into the environment.
Do not contaminate water.
Do not flush into surface water or sanitary sewer system.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sections

Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Handle in accordance with good industrial hygiene and safety

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practice.
Keep container closed when not in use.
Do not use pressure to empty drums.
Ensure all equipment is electrically grounded before beginning transfer operations.

Hygiene measures : Avoid contact with skin, eyes and clothing. Provide adequate ventilation. Do not breathe dust or spray mist.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place.

Further information on storage stability : Stable under recommended storage conditions.

7.3 Specific end use(s)

Specific use(s) : Raw material for industry

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	Workers	Dermal	Long-term systemic effects	0.62 mg/kg
	Workers	Inhalation	Long-term systemic effects, Systemic effects	4.37 mg/m ³
	General exposures	Skin contact	Chronic effects, Systemic effects	0.31 mg/kg
	General exposures	Inhalation	Chronic effects, Systemic effects	1.09 mg/m ³
	General exposures	Ingestion	Chronic effects, Systemic effects	0.31 mg/kg
N-1-naphthylaniline	Workers	Inhalation	Long-term systemic effects	0.18 mg/m ³
	Workers	Inhalation	Acute systemic effects	44 mg/m ³
	Workers	Dermal	Long-term systemic effects	0.05 mg/kg
	Workers	Dermal	Acute systemic effects	6.67 mg/kg
	General exposures	Inhalation	Long-term systemic effects	0.044 mg/m ³

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	General exposures	Inhalation	Acute systemic effects	33 mg/m ³
	General exposures	Dermal	Long-term systemic effects	0.03 mg/kg
	General exposures	Dermal	Long-term systemic effects	3.33 mg/kg
	General exposures	Ingestion	Long-term systemic effects	0.03 mg/kg
	General exposures	Ingestion	Acute systemic effects	8 mg/kg

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	Fresh water	0.051 mg/l
	Marine water	0.0051 mg/l
	Fresh water sediment	9320 mg/kg
	Marine sediment	932 mg/kg
	Soil	1860 mg/kg
	STP	1 mg/l
N-1-naphthylaniline	Fresh water	0.0002 mg/l
	Marine water	0.00002 mg/l
	Fresh water sediment	0.0344 mg/kg
	Marine sediment	0.00344 mg/kg
	Soil	0.0068 mg/kg
	STP	100 mg/l

8.2 Exposure controls

Personal protective equipment

- Eye protection : Safety glasses with side-shields
Tightly fitting safety goggles
- Hand protection
Remarks : Neoprene gloves
- Skin and body protection : Impervious clothing
- Respiratory protection : Breathing apparatus needed only when aerosol or mist is formed.
In the case of vapour formation use a respirator with an approved filter.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance : liquid
- Colour : clear, yellow
- Odour : characteristic

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Odour Threshold	:	No data available
pH	:	Not applicable
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	262 °C
Evaporation rate	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative density	:	No data available
Density	:	0.915 g/cm ³ (15 °C)
Solubility(ies)		
Water solubility	:	slightly soluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	12.0 - 100.0 mPa.s (40 - 100 °C) Method: ASTM D 445
Viscosity, kinematic	:	94.9 mm ² /s (40 °C)

9.2 Other information

Oxidizing potential	:	No information available.
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SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

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10.3 Possibility of hazardous reactions

Hazardous reactions : Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Conditions to avoid : Heat

10.5 Incompatible materials

Materials to avoid : Strong acids and strong bases

10.6 Hazardous decomposition products

Hazardous decomposition products : Carbon oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Components:

N-1-naphthylaniline:

Acute oral toxicity : LD50 (Rat): 1,625 mg/kg

Acute dermal toxicity : LD50 Dermal (Rabbit): > 5,000 mg/kg

Skin corrosion/irritation

Components:

N-1-naphthylaniline:

Species : Rabbit
Method : Draize Test
Result : No skin irritation

Serious eye damage/eye irritation

Components:

N-1-naphthylaniline:

Species : Rabbit
Method : OECD Test Guideline 405
Result : No eye irritation

Respiratory or skin sensitisation

Components:

N-1-naphthylaniline:

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Test Type : Maximisation Test
Species : Guinea pig
Result : Probability or evidence of low to moderate skin sensitisation rate in humans

Germ cell mutagenicity

Components:

N-1-naphthylaniline:

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative

Test Type: Chinese Hamster Ovary (CHO)
Metabolic activation: with and without metabolic activation
Result: negative

Genotoxicity in vivo : Test Type: in vivo assay
Species: Mouse (male)
Result: negative

Germ cell mutagenicity- Assessment : Animal testing did not show any mutagenic effects., Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity

Components:

N-1-naphthylaniline:

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

STOT - repeated exposure

Components:

O,O,O-triphenyl phosphorothioate:

Exposure routes : Oral
Target Organs : Endocrine system
Assessment : May cause damage to organs through prolonged or repeated exposure.

N-1-naphthylaniline:

Exposure routes : Oral
Target Organs : Liver, Kidney
Assessment : May cause damage to organs through prolonged or repeated exposure.

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Aspiration toxicity

Product:

No aspiration toxicity classification

Further information

Product:

Remarks : There is no data available for this product.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Components:

O,O,O-triphenyl phosphorothioate:

Ecotoxicology Assessment

Chronic aquatic toxicity : May cause long lasting harmful effects to aquatic life.

N-1-naphthylaniline:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.44 mg/l
Exposure time: 96 h
Test Type: semi-static test
Analytical monitoring: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.68 mg/l
Exposure time: 48 h
Test Type: semi-static test
Analytical monitoring: yes

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (Protozoa): 2 mg/l
Exposure time: 48 h

EC50 (Bacteria): > 10,000 mg/l
Exposure time: 3 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.02 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Analytical monitoring: yes

M-Factor (Chronic aquatic toxicity) : 1

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12.2 Persistence and degradability

Components:

N-1-naphthylaniline:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Concentration: 100 mg/l
Result: According to the results of tests of biodegradability this product is not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301
GLP: yes

12.3 Bioaccumulative potential

Components:

N-1-naphthylaniline:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Exposure time: 56 d
Temperature: 25 °C
Concentration: 0.1 mg/l
Bioconcentration factor (BCF): 427 - 2,730

Partition coefficient: n-octanol/water : log Pow: 4.28

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Other adverse effects

Product:

Additional ecological information : There is no data available for this product.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

- Product : Dispose of in accordance with the European Directives on waste and hazardous waste.
Dispose of wastes in an approved waste disposal facility.
- Contaminated packaging : Do not burn, or use a cutting torch on, the empty drum.
-

SECTION 14: Transport information

14.1 UN number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

- Remarks : Not classified as dangerous in the meaning of transport regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).
- REACH - List of substances subject to authorisation (Annex XIV) : Not applicable
- Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable
- Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable
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Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

Not applicable

The components of this product are reported in the following inventories:

DSL	: This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.
AICS	: Not in compliance with the inventory
NZIoC	: Not in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
TCSI	: Not in compliance with the inventory
US.TSCA	: All substances listed as active on the TSCA inventory

15.2 Chemical safety assessment

For further information see eSDS.

SECTION 16: Other information

Full text of H-Statements

H302	: Harmful if swallowed.
H317	: May cause an allergic skin reaction.
H373	: May cause damage to organs through prolonged or repeated exposure if swallowed.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.
H413	: May cause long lasting harmful effects to aquatic life.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Skin Sens.	: Skin sensitisation
STOT RE	: Specific target organ toxicity - repeated exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regula-

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tion; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:

Aquatic Chronic 3 H412

Classification procedure:

Calculation method

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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Annex: Exposure Scenarios

Table of Contents

Number	Title
ES 1	Formulation or re-packing; (N-1-naphthylaniline, CAS: 90-30-2); Formulation of preparations.
ES 2	Use at industrial sites; (N-1-naphthylaniline, CAS: 90-30-2); Use of lubricants and greases; vehicles and machinery.
ES 3	Use at industrial sites; (N-1-naphthylaniline, CAS: 90-30-2); Use of lubricants and greases; work pieces or equipment; Treatment by dipping and pouring; Rolling, Brushing; Spraying.
ES 4	Use at industrial sites; (N-1-naphthylaniline, CAS: 90-30-2); Use of lubricants and greases; Treatment by heating; glass.
ES 5	Use at industrial sites; (N-1-naphthylaniline, CAS: 90-30-2); Metal working fluids; Handling and storage.
ES 6	Use at industrial sites; (N-1-naphthylaniline, CAS: 90-30-2); Operation and lubrication of high energy open equipment.
ES 7	Widespread use by professional workers; (N-1-naphthylaniline, CAS: 90-30-2); Use of lubricants and greases; vehicles and machinery.
ES 8	Widespread use by professional workers; (N-1-naphthylaniline, CAS: 90-30-2); Use of lubricants and greases; work pieces or equipment; Treatment by dipping and pouring; Rolling, Brushing; Spraying.
ES 9	Widespread use by professional workers; (N-1-naphthylaniline, CAS: 90-30-2); Operation and lubrication of high energy open equipment.

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ES 1: Formulation or re-packing; (N-1-naphthylaniline, CAS: 90-30-2); Formulation of preparations.

1.1. Title section

Exposure Scenario name	: Formulation of preparations, (N-1-naphthylaniline, CAS: 90-30-2)
Structured Short Title	: Formulation or re-packing; (N-1-naphthylaniline, CAS: 90-30-2); Formulation of preparations.

Environment		
CS 1	Formulation of preparations	ERC2
Worker		
CS 2	Use in closed process, no likelihood of exposure	PROC1
CS 3	Use in closed, continuous process with occasional controlled exposure	PROC2
CS 4	Use in closed batch process (synthesis or formulation)	PROC3
CS 5	Use in batch and other process (synthesis) where opportunity for exposure arises	PROC4
CS 6	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)	PROC5
CS 7	Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities	PROC8a
CS 8	Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities	PROC8b
CS 9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	PROC9
CS 10	Use as laboratory reagent	PROC15

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: Formulation of preparations (ERC2)

Amount used (or contained in articles), frequency and duration of use/exposure	
Daily amount per site	: 233.33 kg
Annual amount per site	: 70000 kg
Release type	: Intermittent use/release

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Emission days	:	300
Technical and organisational conditions and measures		
Product must not be released into water without pre-treatment.		
Soil emission controls are not applicable as there is no direct release to soil.		
Conditions and measures related to sewage treatment plant		
STP type	:	Municipal sewage treatment plant
STP effluent	:	2,000 m ³ /d
Conditions and measures related to treatment of waste (including article waste)		
Waste treatment	:	Can be incinerated, when in compliance with local regulations.
Other conditions affecting environmental exposure		
Receiving surface water flow	:	18,000 m ³ /d
Local freshwater dilution factor	:	10
Local marine water dilution factor	:	100
Emission or Release Factor: Air Worst case assumption 0.005 %		
Emission or Release Factor: Water Worst case assumption 0 %		
Emission or Release Factor: Soil Worst case assumption 0 %		

1.2.2. Control of worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Product (article) characteristics		
Covers the percentage of the substance in the product up to 100 % (unless stated differently).		
Physical form of product	:	Liquid substance
Vapour pressure	:	< 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure		
Duration	:	Exposure duration < 480 min
Use frequency	:	Covers daily exposures up to 8 hours (unless stated differently). 5 days/week
Technical and organisational conditions and measures		
Handle substance within a closed system.		

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Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: 240 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

1.2.3. Control of worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Product (article) characteristics	
<=27%	
Physical form of product	: Liquid substance
Vapour pressure	: < 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration < 480 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently). 5 days/week
Technical and organisational conditions and measures	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Handle substance within a closed system. Use only in area provided with appropriate exhaust ventilation. Inhalation - minimum efficiency of 90 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Indoor

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Assumes a good basic standard of occupational hygiene is implemented

1.2.4. Control of worker exposure: Use in closed batch process (synthesis or formulation) (PROC3)

Product (article) characteristics	
<=27%	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently). 5 days/week
Technical and organisational conditions and measures	
Provide extraction ventilation at points where emissions occur. Inhalation - minimum efficiency of 90 %	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: 240 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

1.2.5. Control of worker exposure: Use in batch and other process (synthesis) where opportunity for exposure arises (PROC4)

Product (article) characteristics	
<=27%	
Physical form of product	: Liquid mixture
Vapour pressure	: < 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure	

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Duration	:	Exposure duration < 240 min
Use frequency	:	5 days/week
Technical and organisational conditions and measures		
Provide extraction ventilation at points where emissions occur. Inhalation - minimum efficiency of 90 %		
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 98 %		
Other conditions affecting workers exposure		
Body parts exposed	:	Palms of both hands (480 cm ²)
Indoor or outdoor use	:	Indoor
Assumes a good basic standard of occupational hygiene is implemented		

1.2.6. Control of worker exposure: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) (PROC5)

Product (article) characteristics		
Limit the substance content in the product to 10 %.		
Physical form of product	:	Liquid mixture
Vapour pressure	:	< 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure		
Duration	:	Exposure duration < 240 min
Use frequency	:	5 days/week
Technical and organisational conditions and measures		
Provide extraction ventilation at points where emissions occur. Inhalation - minimum efficiency of 90 %		
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.		

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Dermal - minimum efficiency of 98 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

1.2.7. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 100 % (unless stated differently).	
Physical form of product	: Solid, low dustiness
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration < 60 min
Use frequency	: 5 days/week
Technical and organisational conditions and measures	
Provide extraction ventilation at points where emissions occur. Inhalation - minimum efficiency of 90 %	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 98 %	
Other conditions affecting workers exposure	
Body parts exposed	: 960 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

1.2.8. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 100 % (unless stated differently).	

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Physical form of product	: Solid, low dustiness
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration < 60 min
Use frequency	: 5 days/week
Technical and organisational conditions and measures	
Provide extraction ventilation at points where emissions occur. Inhalation - minimum efficiency of 95 %	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 98 %	
Other conditions affecting workers exposure	
Body parts exposed	: 960 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

1.2.9. Control of worker exposure: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9)

Product (article) characteristics	
<=27%	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration < 240 min
Technical and organisational conditions and measures	
Provide extraction ventilation at points where emissions occur. Inhalation - minimum efficiency of 90 %	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervi-	

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sion controls. Dermal - minimum efficiency of 98 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

1.2.10. Control of worker exposure: Use as laboratory reagent (PROC15)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 100 % (unless stated differently).	
Physical form of product	: Solid, low dustiness
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration < 240 min
Technical and organisational conditions and measures	
Provide extraction ventilation at points where emissions occur. Inhalation - minimum efficiency of 90 %	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: 240 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

1.3. Exposure estimation and reference to its source

1.3.1. Environmental release and exposure: Formulation of preparations (ERC2)

Protection Target	Exposure estimate	RCR
Fresh water	0.000007 mg/L (EASY TRA v4.1)	0.033

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Marine water	0.0000007 mg/L (EASY TRA v4.1)	0.034
Fresh water sediment	0.000026 mg/kg dry weight (EASY TRA v4.1)	< 0.001
Marine sediment	0.0000027 mg/kg dry weight (EASY TRA v4.1)	< 0.001
Soil	0.0000027 mg/kg dry weight (EASY TRA v4.1)	< 0.001
Sewage treatment plant	< 0.0000001 mg/L (EASY TRA v4.1)	< 0.001

1.3.2. Worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.091 mg/m ³ (EASY TRA v4.1)	0.508
dermal	systemic	long-term	0.002 mg/kg bw/day (EASY TRA v4.1)	0.034

1.3.3. Worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.01 mg/m ³ (ECETOC TRA worker v3)	0.054
dermal	systemic	long-term	0.019 mg/kg bw/day (ECETOC TRA worker v3)	0.37

1.3.4. Worker exposure: Use in closed batch process (synthesis or formulation) (PROC3)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.091 mg/m ³ (ECETOC TRA worker v3)	0.508
dermal	systemic	long-term	0.009 mg/kg bw/day (ECETOC TRA worker v3)	0.185

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1.3.5. Worker exposure: Use in batch and other process (synthesis) where opportunity for exposure arises (PROC4)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.055 mg/m ³ (ECETOC TRA worker v3)	0.305
dermal	systemic	long-term	0.022 mg/kg bw/day (ECETOC TRA worker v3)	0.444

1.3.6. Worker exposure: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) (PROC5)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.033 mg/m ³ (ECETOC TRA worker v3)	0.183
dermal	systemic	long-term	0.016 mg/kg bw/day (ECETOC TRA worker v3)	0.329

1.3.7. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.01 mg/m ³ (EASY TRA v4.1)	0.056
dermal	systemic	long-term	0.017 mg/kg bw/day (RISKOFDERM v2.1)	0.336

1.3.8. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.001 mg/m ³ (EASY TRA v4.1)	0.006
dermal	systemic	long-term	0.017 mg/kg bw/day	0.336

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			(RISKOFDERM v2.1)	
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1.3.9. Worker exposure: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.055 mg/m ³ (ECETOC TRA worker v3)	0.305
dermal	systemic	long-term	0.022 mg/kg bw/day (ECETOC TRA worker v3)	0.444

1.3.10. Worker exposure: Use as laboratory reagent (PROC15)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.006 mg/m ³ (EASY TRA v4.1)	0.033
dermal	systemic	long-term	0.010 mg/kg bw/day (EASY TRA v4.1)	0.206

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

Fulfilling the above conditions the downstream user is deemed to work safely inside the boundaries set by this exposure scenario.

Other conditions should only be considered if the downstream user implements or recommends an exposure scenario which includes as a minimum the conditions described in this exposure scenario.

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ES 2: Use at industrial sites; (N-1-naphthylaniline, CAS: 90-30-2); Use of lubricants and greases; vehicles and machinery.

2.1. Title section

Exposure Scenario name	: Use of lubricants and greases, vehicles and machinery, (N-1-naphthylaniline, CAS: 90-30-2)
Structured Short Title	: Use at industrial sites; (N-1-naphthylaniline, CAS: 90-30-2); Use of lubricants and greases; vehicles and machinery.

Environment		
CS 1	Industrial use of processing aids in processes and products, not becoming part of articles	ERC4
Worker		
CS 2	Use in closed process, no likelihood of exposure	PROC1
CS 3	Use in closed, continuous process with occasional controlled exposure	PROC2
CS 4	Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities	PROC8b
CS 5	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	PROC9

2.2. Conditions of use affecting exposure

2.2.1. Control of environmental exposure: Industrial use of processing aids in processes and products, not becoming part of articles (ERC4)

Amount used (or contained in articles), frequency and duration of use/exposure	
Daily amount per site	: 100 kg
Annual amount per site	: 30000 kg
Release type	: Intermittent use/release
Emission days	: 300
Technical and organisational conditions and measures	
Product must not be released into water without pre-treatment.	
Soil emission controls are not applicable as there is no direct release to soil.	

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Conditions and measures related to sewage treatment plant	
STP type	: Municipal sewage treatment plant
STP effluent	: 2,000 m ³ /d
Conditions and measures related to treatment of waste (including article waste)	
Waste treatment	: Can be incinerated, when in compliance with local regulations.
Other conditions affecting environmental exposure	
Receiving surface water flow	: 18,000 m ³ /d
Local freshwater dilution factor	: 10
Local marine water dilution factor	: 100
Emission or Release Factor: Air Worst case assumption 0.005 %	
Emission or Release Factor: Water Worst case assumption 0 %	
Emission or Release Factor: Soil Worst case assumption 0 %	

2.2.2. Control of worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 95 %	

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Other conditions affecting workers exposure	
Body parts exposed	: 240 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

2.2.3. Control of worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

2.2.4. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture

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Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration < 240 min
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 98 %	
Other conditions affecting workers exposure	
Body parts exposed	: 960 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

2.2.5. Control of worker exposure: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 98 %	

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Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

2.3. Exposure estimation and reference to its source

2.3.1. Environmental release and exposure: Industrial use of processing aids in processes and products, not becoming part of articles (ERC4)

Protection Target	Exposure estimate	RCR
Fresh water	0.0000067 mg/L (EASY TRA v4.1)	0.033
Marine water	0.0000007 mg/L (EASY TRA v4.1)	0.034
Fresh water sediment	0.000026 mg/kg dry weight (EASY TRA v4.1)	< 0.001
Marine sediment	0.0000027 mg/kg dry weight (EASY TRA v4.1)	< 0.001
Soil	0.0000012 mg/kg dry weight (EASY TRA v4.1)	< 0.001
Sewage treatment plant	< 0.0000001 mg/L (EASY TRA v4.1)	< 0.001

2.3.2. Worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.018 mg/m ³ (EASY TRA v4.1)	0.102
dermal	systemic	long-term	< 0.001 mg/kg bw/day (EASY TRA v4.1)	0.007

2.3.3. Worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
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inhalative	systemic	long-term	0.097 mg/m ³ (ECETOC TRA worker v3)	0.541
dermal	systemic	long-term	0.003 mg/kg bw/day (ECETOC TRA worker v3)	0.069

2.3.4. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.110 mg/m ³ (ECETOC TRA worker v3)	0.609
dermal	systemic	long-term	0.008 mg/kg bw/day (ECETOC TRA worker v3)	0.165

2.3.5. Worker exposure: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.097 mg/m ³ (ECETOC TRA worker v3)	0.541
dermal	systemic	long-term	0.007 mg/kg bw/day (ECETOC TRA worker v3)	0.137

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

Fulfilling the above conditions the downstream user is deemed to work safely inside the boundaries set by this exposure scenario.

Other conditions should only be considered if the downstream user implements or recommends an exposure scenario which includes as a minimum the conditions described in this exposure scenario.

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ES 3: Use at industrial sites; (N-1-naphthylaniline, CAS: 90-30-2); Use of lubricants and greases; work pieces or equipment; Treatment by dipping and pouring; Rolling, Brushing; Spraying.

3.1. Title section

Exposure Scenario name	: Use of lubricants and greases, work pieces or equipment, Treatment by dipping and pouring, Rolling, Brushing, Spraying, (N-1-naphthylaniline, CAS: 90-30-2)
Structured Short Title	: Use at industrial sites; (N-1-naphthylaniline, CAS: 90-30-2); Use of lubricants and greases; work pieces or equipment; Treatment by dipping and pouring; Rolling, Brushing; Spraying.

Environment		
CS 1	Industrial use of processing aids in processes and products, not becoming part of articles	ERC4
Worker		
CS 2	Use in closed process, no likelihood of exposure	PROC1
CS 3	Use in closed, continuous process with occasional controlled exposure	PROC2
CS 4	Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities	PROC8b
CS 5	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	PROC9
CS 6	Roller application or brushing	PROC10
CS 7	Heat and pressure transfer fluids in dispersive, professional use but closed systems	PROC20

3.2. Conditions of use affecting exposure

3.2.1. Control of environmental exposure: Industrial use of processing aids in processes and products, not becoming part of articles (ERC4)

Amount used (or contained in articles), frequency and duration of use/exposure	
Daily amount per site	: 100 kg
Annual amount per site	: 30000 kg
Release type	: Intermittent use/release
Emission days	: 300

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Technical and organisational conditions and measures	
Product must not be released into water without pre-treatment.	
Soil emission controls are not applicable as there is no direct release to soil.	
Conditions and measures related to sewage treatment plant	
STP type	: Default industrial size
STP effluent	: 2,000 m3/d
Conditions and measures related to treatment of waste (including article waste)	
Waste treatment	: Can be incinerated, when in compliance with local regulations.
Other conditions affecting environmental exposure	
Receiving surface water flow	: 18,000 m3/d
Local freshwater dilution factor	: 10
Local marine water dilution factor	: 100
Emission or Release Factor: Air Worst case assumption 0.005 %	
Emission or Release Factor: Water Worst case assumption 0 %	
Emission or Release Factor: Soil Worst case assumption 0 %	

3.2.2. Control of worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture
Vapour pressure	: > 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
General standard operating procedures to control routine activities	

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Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: 240 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

3.2.3. Control of worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

3.2.4. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

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Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration < 240 min
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	
Body parts exposed	: 960 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

3.2.5. Control of worker exposure: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration < 60 min
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.	

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Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

3.2.6. Control of worker exposure: Roller application or brushing (PROC10)

Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid mixture
Vapour pressure	: > 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Provide extraction ventilation at points where emissions occur. Inhalation - minimum efficiency of 90 %	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: 960 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

3.2.7. Control of worker exposure: Heat and pressure transfer fluids in dispersive, professional use but closed systems (PROC20)

Product (article) characteristics
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Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid mixture
Vapour pressure	: > 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration < 240 min
Technical and organisational conditions and measures	
Provide extraction ventilation at points where emissions occur.	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

3.3. Exposure estimation and reference to its source

3.3.1. Environmental release and exposure: Industrial use of processing aids in processes and products, not becoming part of articles (ERC4)

Protection Target	Exposure estimate	RCR
Fresh water	0.0000067 mg/L (EASY TRA v4.1)	0.033
Marine water	0.0000007 mg/L (EASY TRA v4.1)	0.034
Fresh water sediment	0.000026 mg/kg dry weight (EASY TRA v4.1)	< 0.001
Marine sediment	0.0000027 mg/kg dry weight (EASY TRA v4.1)	< 0.001
Soil	0.0000012 mg/kg dry weight (EASY TRA v4.1)	< 0.001
Sewage treatment plant	< 0.0000001 mg/L (EASY TRA v4.1)	< 0.001

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3.3.3. Worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.091 mg/m ³ (EASY TRA v4.1)	0.508
dermal	systemic	long-term	0.014 mg/kg bw/day (EASY TRA v4.1)	0.274

3.3.4. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.055 mg/m ³ (ECETOC TRA worker v3)	0.305
dermal	systemic	long-term	0.008 mg/kg bw/day (ECETOC TRA worker v3)	0.165

3.3.7. Worker exposure: Heat and pressure transfer fluids in dispersive, professional use but closed systems (PROC20)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.055 mg/m ³ (EASY TRA v4.1)	0.305
dermal	systemic	long-term	0.017 mg/kg bw/day (EASY TRA v4.1)	0.343

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

Fulfilling the above conditions the downstream user is deemed to work safely inside the boundaries set by this exposure scenario.

Other conditions should only be considered if the downstream user implements or recommends an exposure scenario which includes as a minimum the conditions described in this exposure scenario.

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ES 4: Use at industrial sites; (N-1-naphthylaniline, CAS: 90-30-2); Use of lubricants and greases; Treatment by heating; glass.

4.1. Title section

Exposure Scenario name	: Use of lubricants and greases, Treatment by heating, glass, (N-1-naphthylaniline, CAS: 90-30-2)
Structured Short Title	: Use at industrial sites; (N-1-naphthylaniline, CAS: 90-30-2); Use of lubricants and greases; Treatment by heating; glass.

Environment		
CS 1	Industrial use of processing aids in processes and products, not becoming part of articles	ERC4
Worker		
CS 2	Use in closed process, no likelihood of exposure	PROC1
CS 3	Use in closed, continuous process with occasional controlled exposure	PROC2
CS 4	Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities	PROC8b
CS 5	Treatment of articles by dipping and pouring	PROC13

4.2. Conditions of use affecting exposure

4.2.1. Control of environmental exposure: Industrial use of processing aids in processes and products, not becoming part of articles (ERC4)

Amount used (or contained in articles), frequency and duration of use/exposure	
Daily amount per site	: 20 kg
Annual amount per site	: 6000 kg
Release type	: Intermittent use/release
Emission days	: 300
Technical and organisational conditions and measures	
Product must not be released into water without pre-treatment.	
Soil emission controls are not applicable as there is no direct release to soil.	
Conditions and measures related to sewage treatment plant	

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STP type	:	Default industrial size
STP effluent	:	2,000 m ³ /d
Conditions and measures related to treatment of waste (including article waste)		
Waste treatment	:	Can be incinerated, when in compliance with local regulations.
Other conditions affecting environmental exposure		
Receiving surface water flow	:	18,000 m ³ /d
Local freshwater dilution factor	:	10
Local marine water dilution factor	:	100
Emission or Release Factor: Air Worst case assumption 0.005 %		
Emission or Release Factor: Water Worst case assumption 0 %		
Emission or Release Factor: Soil Worst case assumption 0 %		

4.2.2. Control of worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid mixture
Vapour pressure	: > 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Handle substance within a closed system.	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	

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Body parts exposed	: 240 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

4.2.3. Control of worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

4.2.4. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	

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Duration	:	Exposure duration < 240 min
Technical and organisational conditions and measures		
Ensure adequate ventilation, especially in confined areas.		
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear a respirator conforming to EN140 with Type A/P2 filter or better. Inhalation - minimum efficiency of 98 %		
Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 98 %		
Other conditions affecting workers exposure		
Body parts exposed	:	960 cm ²
Indoor or outdoor use	:	Indoor
Assumes a good basic standard of occupational hygiene is implemented		

4.2.5. Control of worker exposure: Treatment of articles by dipping and pouring (PROC13)

Product (article) characteristics		
Covers the percentage of the substance in the product up to 5%.		
Physical form of product	:	Liquid mixture
Vapour pressure	:	> 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure		
Duration	:	Exposure duration > 240 min
Use frequency	:	Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures		
Provide extraction ventilation at points where emissions occur. Inhalation - minimum efficiency of 90 %		
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear a respirator conforming to EN140 with Type A/P2 filter or better. Inhalation - minimum efficiency of 98 %		
Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervi-		

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sion controls. Dermal - minimum efficiency of 98 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

4.3. Exposure estimation and reference to its source

Release estimation method:

4.3.2. Worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.009 mg/m ³ (EASY TRA v4.1)	0.051
dermal	systemic	long-term	< 0.001 mg/kg bw/day (EASY TRA v4.1)	0.007

4.3.3. Worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.091 mg/m ³ (EASY TRA v4.1)	0.508
dermal	systemic	long-term	0.014 mg/kg bw/day (EASY TRA v4.1)	0.274

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

Fulfilling the above conditions the downstream user is deemed to work safely inside the boundaries set by this exposure scenario.

Other conditions should only be considered if the downstream user implements or recommends an exposure scenario which includes as a minimum the conditions described in this exposure scenario.

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ES 5: Use at industrial sites; (N-1-naphthylaniline, CAS: 90-30-2); Metal working fluids; Handling and storage.

5.1. Title section

Exposure Scenario name	: Metal working fluids, Handling and storage, (N-1-naphthylaniline, CAS: 90-30-2)
Structured Short Title	: Use at industrial sites; (N-1-naphthylaniline, CAS: 90-30-2); Metal working fluids; Handling and storage.

Environment		
CS 1	Formulation of preparations	ERC2
Worker		
CS 2	Use in closed process, no likelihood of exposure	PROC1
CS 3	Use in closed, continuous process with occasional controlled exposure	PROC2
CS 4	Roller application or brushing	PROC10
CS 5	Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities	PROC8b

5.2. Conditions of use affecting exposure

5.2.1. Control of environmental exposure: Formulation of preparations (ERC2)

Amount used (or contained in articles), frequency and duration of use/exposure	
Daily amount per site	: 250 kg
Annual amount per site	: 5000 kg
Release type	: Intermittent use/release
Emission days	: 20
Technical and organisational conditions and measures	
Product must not be released into water without pre-treatment.	
Soil emission controls are not applicable as there is no direct release to soil.	
Conditions and measures related to sewage treatment plant	
STP type	: Default industrial size

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STP effluent	:	2,000 m3/d
Conditions and measures related to treatment of waste (including article waste)		
Waste treatment	:	Can be incinerated, when in compliance with local regulations.
Other conditions affecting environmental exposure		
Receiving surface water flow	:	18,000 m3/d
Local freshwater dilution factor	:	10
Local marine water dilution factor	:	100
Emission or Release Factor: Air Worst case assumption 0.005 %		
Emission or Release Factor: Water Worst case assumption 0 %		
Emission or Release Factor: Soil Worst case assumption 0 %		

5.2.2. Control of worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture
Vapour pressure	: > 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: 240 cm2

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Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

5.2.3. Control of worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture
Vapour pressure	: > 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

5.2.4. Control of worker exposure: Roller application or brushing (PROC10)

Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid mixture
Vapour pressure	: > 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure	

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Duration	: Exposure duration > 240 min
Technical and organisational conditions and measures	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Use only in area provided with appropriate exhaust ventilation. Dermal - minimum efficiency of 90 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: 960 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

5.2.5. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture
Vapour pressure	: > 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration < 240 min
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 98 %	
Other conditions affecting workers exposure	
Body parts exposed	: 960 cm ²

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Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

5.3. Exposure estimation and reference to its source

Release estimation method:

5.3.2. Worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.018 mg/m ³ (EASY TRA v4.1)	0.102
dermal	systemic	long-term	< 0.001 mg/kg bw/day (EASY TRA v4.1)	0.007

5.3.3. Worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.097 mg/m ³ (ECETOC TRA worker v3)	0.541
dermal	systemic	long-term	0.003 mg/kg bw/day (ECETOC TRA worker v3)	0.069

5.3.4. Worker exposure: Roller application or brushing (PROC10)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.009 mg/m ³ (ECETOC TRA worker v3)	0.051
dermal	systemic	long-term	0.014 mg/kg bw/day (ECETOC TRA worker v3)	0.274

5.3.5. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

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Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.110 mg/m ³ (ECETOC TRA worker v3)	0.609
dermal	systemic	long-term	0.008 mg/kg bw/day (ECETOC TRA worker v3)	0.165

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

Fulfilling the above conditions the downstream user is deemed to work safely inside the boundaries set by this exposure scenario.

Other conditions should only be considered if the downstream user implements or recommends an exposure scenario which includes as a minimum the conditions described in this exposure scenario.

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ES 6: Use at industrial sites; (N-1-naphthylaniline, CAS: 90-30-2); Operation and lubrication of high energy open equipment.

6.1. Title section

Exposure Scenario name	: Operation and lubrication of high energy open equipment, (N-1-naphthylaniline, CAS: 90-30-2)
Structured Short Title	: Use at industrial sites; (N-1-naphthylaniline, CAS: 90-30-2); Operation and lubrication of high energy open equipment.

Environment		
CS 1	Wide dispersive indoor use of processing aids in open systems	ERC8a
Worker		
CS 2	Use in closed process, no likelihood of exposure	PROC1
CS 3	Use in closed, continuous process with occasional controlled exposure	PROC2
CS 4	Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities	PROC8b
CS 5	Roller application or brushing	PROC10

6.2. Conditions of use affecting exposure

6.2.1. Control of environmental exposure: Wide dispersive indoor use of processing aids in open systems (ERC8a)

Amount used (or contained in articles), frequency and duration of use/exposure	
Daily amount per site	: 0.822 kg
Annual amount for wide disperse uses	: 6000 kg
Release type	: Intermittent use/release
Emission days	: 365
Technical and organisational conditions and measures	
Product must not be released into water without pre-treatment.	
Soil emission controls are not applicable as there is no direct release to soil.	

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Conditions and measures related to sewage treatment plant	
STP type	: Municipal sewage treatment plant
STP effluent	: 2,000 m ³ /d
Conditions and measures related to treatment of waste (including article waste)	
Waste treatment	: Can be incinerated, when in compliance with local regulations.
Other conditions affecting environmental exposure	
Receiving surface water flow	: 18,000 m ³ /d
Local freshwater dilution factor	: 10
Local marine water dilution factor	: 100
Emission or Release Factor: Air Worst case assumption 0.010 %	
Emission or Release Factor: Water Worst case assumption 0.050 %	
Emission or Release Factor: Soil Worst case assumption 0.100 %	

6.2.2. Control of worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid mixture
Vapour pressure	: > 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Handle substance within a closed system.	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %	

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Other conditions affecting workers exposure	
Body parts exposed	: 240 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

6.2.3. Control of worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

6.2.4. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid mixture

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Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration < 240 min
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	
Body parts exposed	: 960 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

6.2.5. Control of worker exposure: Roller application or brushing (PROC10)

Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid mixture
Vapour pressure	: > 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure	
Application rate	: 0.2 L/min
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
General standard operating procedures to control routine activities Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %	

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Other conditions affecting workers exposure
Body parts exposed : 960 cm ²
Indoor or outdoor use : Indoor
Assumes a good basic standard of occupational hygiene is implemented
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply
Ensure that direction of application is only downward.

6.3. Exposure estimation and reference to its source

6.3.1. Environmental release and exposure: Wide dispersive indoor use of processing aids in open systems (ERC8a)

Protection Target	Exposure estimate	RCR
Fresh water	0.0000067 mg/L (EASY TRA v4.1)	0.033
Marine water	0.0000007 mg/L (EASY TRA v4.1)	0.034
Fresh water sediment	0.000026 mg/kg dry weight (EASY TRA v4.1)	< 0.001
Marine sediment	0.0000027 mg/kg dry weight (EASY TRA v4.1)	< 0.001
Soil	< 0.0000001 mg/kg dry weight (EASY TRA v4.1)	< 0.001
Sewage treatment plant	0.0000002 mg/L (EASY TRA v4.1)	< 0.001

6.3.2. Worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.009 mg/m ³ (EASY TRA v4.1)	0.051
dermal	systemic	long-term	< 0.001 mg/kg bw/day (EASY TRA v4.1)	0.007

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6.3.3. Worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.091 mg/m ³ (EASY TRA v4.1)	0.508
dermal	systemic	long-term	0.014 mg/kg bw/day (EASY TRA v4.1)	0.274

6.3.4. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.055 mg/m ³ (ECETOC TRA worker v3)	0.305
dermal	systemic	long-term	0.008 mg/kg bw/day (ECETOC TRA worker v3)	0.165

6.3.5. Worker exposure: Roller application or brushing (PROC10)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.01 mg/m ³ (ART)	0.054
dermal	systemic	long-term	0.038 mg/kg bw/day (RISKOFDERM v2.1)	0.76

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

Fulfilling the above conditions the downstream user is deemed to work safely inside the boundaries set by this exposure scenario.

Other conditions should only be considered if the downstream user implements or recommends an exposure scenario which includes as a minimum the conditions described in this exposure scenario.

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ES 7: Widespread use by professional workers; (N-1-naphthylaniline, CAS: 90-30-2); Use of lubricants and greases; vehicles and machinery.

7.1. Title section

Exposure Scenario name	: Use of lubricants and greases, vehicles and machinery, (N-1-naphthylaniline, CAS: 90-30-2)
Structured Short Title	: Widespread use by professional workers; (N-1-naphthylaniline, CAS: 90-30-2); Use of lubricants and greases; vehicles and machinery.

Environment		
CS 1	Wide dispersive indoor use of substances in closed systems	ERC9a
Worker		
CS 2	Use in closed process, no likelihood of exposure	PROC1
CS 3	Use in closed, continuous process with occasional controlled exposure	PROC2
CS 4	Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities, Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities	PROC8a, PROC8b
CS 5	Heat and pressure transfer fluids in dispersive, professional use but closed systems	PROC20

7.2. Conditions of use affecting exposure

7.2.1. Control of environmental exposure: Wide dispersive indoor use of substances in closed systems (ERC9a)

Amount used (or contained in articles), frequency and duration of use/exposure	
Daily amount for wide dispersive uses	: 0.002 kg
Annual amount for wide disperse uses	: 15000 kg
Release type	: Intermittent use/release
Emission days	: 365
Technical and organisational conditions and measures	

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Product must not be released into water without pre-treatment.	
Conditions and measures related to sewage treatment plant	
STP type	: Municipal sewage treatment plant
STP effluent	: 2,000 m ³ /d
Conditions and measures related to treatment of waste (including article waste)	
Waste treatment	: Can be incinerated, when in compliance with local regulations.
Other conditions affecting environmental exposure	
Receiving surface water flow	: 18,000 m ³ /d
Local freshwater dilution factor	: 10
Local marine water dilution factor	: 100
Emission or Release Factor: Air Worst case assumption 0.01 %	
Emission or Release Factor: Water Worst case assumption 0.05 %	
Emission or Release Factor: Soil Worst case assumption 0.1 %	

7.2.2. Control of worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid mixture
Vapour pressure	: > 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %	

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Other conditions affecting workers exposure	
Body parts exposed	: 240 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

7.2.3. Control of worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid mixture
Vapour pressure	: > 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Covers indoor and outdoor use.
Assumes a good basic standard of occupational hygiene is implemented	

7.2.4. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a) / Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Product (article) characteristics
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Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid mixture
Vapour pressure	: > 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration < 240 min
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	
Body parts exposed	: 960 cm ²
Indoor or outdoor use	: Covers indoor and outdoor use.
Assumes a good basic standard of occupational hygiene is implemented	

7.2.5. Control of worker exposure: Heat and pressure transfer fluids in dispersive, professional use but closed systems (PROC20)

Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid mixture
Vapour pressure	: > 10 hPa
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration < 240 min
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %	

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Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Covers indoor and outdoor use.
Assumes a good basic standard of occupational hygiene is implemented	

7.3. Exposure estimation and reference to its source

7.3.1. Environmental release and exposure: Wide dispersive indoor use of substances in closed systems (ERC9a)

Protection Target	Exposure estimate	RCR
Fresh water	0.0000067 mg/L (EASY TRA v4.1)	0.034
Marine water	0.0000007 mg/L (EASY TRA v4.1)	0.035
Fresh water sediment	0.000026 mg/kg dry weight (EASY TRA v4.1)	< 0.001
Marine sediment	0.0000027 mg/kg dry weight (EASY TRA v4.1)	< 0.001
Soil	< 0.0000001 mg/kg dry weight (EASY TRA v4.1)	< 0.001
Sewage treatment plant	0.0000005 mg/L (EASY TRA v4.1)	< 0.001

7.3.2. Worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.009 mg/m ³ (EASY TRA v4.1)	0.051
dermal	systemic	long-term	< 0.001 mg/kg bw/day (EASY TRA v4.1)	0.007

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

Fulfilling the above conditions the downstream user is deemed to work safely inside the boundaries set by this exposure scenario.

Other conditions should only be considered if the downstream user implements or recommends an exposure scenario which includes as a minimum the conditions described in this exposure scenario.

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ES 8: Widespread use by professional workers; (N-1-naphthylaniline, CAS: 90-30-2); Use of lubricants and greases; work pieces or equipment; Treatment by dipping and pouring; Rolling, Brushing; Spraying.

8.1. Title section

Exposure Scenario name	: Use of lubricants and greases, work pieces or equipment, Treatment by dipping and pouring, Rolling, Brushing, Spraying, (N-1-naphthylaniline, CAS: 90-30-2)
Structured Short Title	: Widespread use by professional workers; (N-1-naphthylaniline, CAS: 90-30-2); Use of lubricants and greases; work pieces or equipment; Treatment by dipping and pouring; Rolling, Brushing; Spraying.

Environment		
CS 1	Industrial use of processing aids in processes and products, not becoming part of articles	ERC4
Worker		
CS 2	Use in closed process, no likelihood of exposure	PROC1
CS 3	Use in closed, continuous process with occasional controlled exposure	PROC2
CS 4	Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities	PROC8b
CS 5	Roller application or brushing	PROC10
CS 6	Treatment of articles by dipping and pouring	PROC13

8.2. Conditions of use affecting exposure

8.2.1. Control of environmental exposure: Industrial use of processing aids in processes and products, not becoming part of articles (ERC4)

Amount used (or contained in articles), frequency and duration of use/exposure	
Daily amount per site	: 20 kg
Annual amount per site	: 6000 kg
Release type	: Intermittent use/release
Emission days	: 300
Technical and organisational conditions and measures	

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Product must not be released into water without pre-treatment.	
Conditions and measures related to sewage treatment plant	
STP type	: Municipal sewage treatment plant
STP effluent	: 2,000 m ³ /d
Conditions and measures related to treatment of waste (including article waste)	
Waste treatment	: Can be incinerated, when in compliance with local regulations.
Other conditions affecting environmental exposure	
Receiving surface water flow	: 18,000 m ³ /d
Local freshwater dilution factor	: 10
Local marine water dilution factor	: 100
Emission or Release Factor: Air Worst case assumption 0.005 %	
Emission or Release Factor: Water Worst case assumption < 0.001 %	
Emission or Release Factor: Soil Worst case assumption 0 %	

8.2.2. Control of worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95 %	

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Other conditions affecting workers exposure	
Body parts exposed	: 240 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

8.2.3. Control of worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

8.2.4. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture

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Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration < 240 min
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.	
Suitable mask with particle filter P3 (European Norm 143)	
Dermal - minimum efficiency of 98 %	
Inhalation - minimum efficiency of 98 %	
Other conditions affecting workers exposure	
Body parts exposed	: 960 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	
Process Temperature 123 °C	

8.2.5. Control of worker exposure: Roller application or brushing (PROC10)

Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.	
Dermal - minimum efficiency of 90 %	

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Other conditions affecting workers exposure	
Body parts exposed	: 960 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

8.2.6. Control of worker exposure: Treatment of articles by dipping and pouring (PROC13)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures.	
Use only in area provided with appropriate exhaust ventilation. Inhalation - minimum efficiency of 90 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls. Suitable mask with particle filter P3 (European Norm 143) Dermal - minimum efficiency of 98 % Inhalation - minimum efficiency of 98 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	
Process Temperature 123 °C	

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8.3. Exposure estimation and reference to its source

8.3.1. Environmental release and exposure: Industrial use of processing aids in processes and products, not becoming part of articles (ERC4)

Protection Target	Exposure estimate	RCR
Fresh water	0.000007 mg/L (EUSES v2.1)	0.033
Marine water	0.0000007 mg/L (EUSES v2.1)	0.034
Fresh water sediment	0.000026 mg/kg dry weight (EUSES v2.1)	< 0.01
Marine sediment	0.0000027 mg/kg dry weight (EUSES v2.1)	< 0.01
Soil	0.0000003 mg/kg dry weight (EUSES v2.1)	< 0.001
Sewage treatment plant	< 0.0000001 mg/L (EUSES v2.1)	< 0.001

8.3.2. Worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.018 mg/m ³ (EASY TRA v4.1)	0.102
dermal	systemic	long-term	< 0.001 mg/kg bw/day (EASY TRA v4.1)	0.007

8.3.3. Worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.097 mg/m ³ (ECETOC TRA)	0.541
dermal	systemic	long-term	0.003 mg/kg bw/day (ECETOC TRA)	0.069

8.3.4. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
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inhalative	systemic	long-term	0.110 mg/m ³ (ECETOC TRA)	0.609
dermal	systemic	long-term	0.008 mg/kg bw/day (ECETOC TRA)	0.165

8.3.6. Worker exposure: Treatment of articles by dipping and pouring (PROC13)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.037 mg/m ³ (ECETOC TRA)	0.203
dermal	systemic	long-term	0.014 mg/kg bw/day (ECETOC TRA)	0.274

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

Fulfilling the above conditions the downstream user is deemed to work safely inside the boundaries set by this exposure scenario.

Other conditions should only be considered if the downstream user implements or recommends an exposure scenario which includes as a minimum the conditions described in this exposure scenario.

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Energizing Chemistry

ANDEROL 2100 HTCL

Version 1.7 Revision Date: 05.10.2020 SDS Number: 000000007690 Date of last issue: 22.01.2018
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ES 9: Widespread use by professional workers; (N-1-naphthylaniline, CAS: 90-30-2); Operation and lubrication of high energy open equipment.

9.1. Title section

Exposure Scenario name	: Operation and lubrication of high energy open equipment, (N-1-naphthylaniline, CAS: 90-30-2)
Structured Short Title	: Widespread use by professional workers; (N-1-naphthylaniline, CAS: 90-30-2); Operation and lubrication of high energy open equipment.

Environment		
CS 1	Formulation of preparations	ERC2
Worker		
CS 2	Use in closed process, no likelihood of exposure	PROC1
CS 3	Use in closed, continuous process with occasional controlled exposure	PROC2
CS 4	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)	PROC5
CS 5	Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities	PROC8b

9.2. Conditions of use affecting exposure

9.2.1. Control of environmental exposure: Formulation of preparations (ERC2)

Amount used (or contained in articles), frequency and duration of use/exposure	
Daily amount per site	: < 0.250 kg
Annual amount per site	: 5000 kg
Release type	: Intermittent use/release
Emission days	: 20
Technical and organisational conditions and measures	
Product must not be released into water without pre-treatment.	
Conditions and measures related to sewage treatment plant	
STP type	: Municipal sewage treatment plant

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STP effluent	: 2,000 m3/d
Conditions and measures related to treatment of waste (including article waste)	
Waste treatment	: Can be incinerated, when in compliance with local regulations.
Other conditions affecting environmental exposure	
Receiving surface water flow	: 18,000 m3/d
Local freshwater dilution factor	: 10
Local marine water dilution factor	: 100
Emission or Release Factor: Air Worst case assumption 0.005 %	
Emission or Release Factor: Water Worst case assumption < 0.001 %	
Emission or Release Factor: Soil Worst case assumption 0 %	

9.2.2. Control of worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Handle substance within a closed system. Ensure adequate ventilation, especially in confined areas.	
Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: 240 cm2
Indoor or outdoor use	: Indoor

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Assumes a good basic standard of occupational hygiene is implemented

9.2.3. Control of worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Exposure duration > 240 min
Use frequency	: Covers daily exposures up to 8 hours (unless stated differently).
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas. Handle substance within a closed system.	
Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

9.2.4. Control of worker exposure: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) (PROC5)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Application duration <= 60 min

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Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²)
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

9.2.5. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Product (article) characteristics	
Covers the percentage of the substance in the product up to 5%.	
Physical form of product	: Liquid mixture
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Application duration <= 60 min
Technical and organisational conditions and measures	
Ensure adequate ventilation, especially in confined areas.	
Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: 960 cm ²
Indoor or outdoor use	: Indoor
Assumes a good basic standard of occupational hygiene is implemented	

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9.3. Exposure estimation and reference to its source

9.3.1. Environmental release and exposure: Formulation of preparations (ERC2)

Protection Target	Exposure estimate	RCR
Fresh water	0.000007 mg/L (EUSES v2.1)	0.033
Marine water	0.0000007 mg/L (EUSES v2.1)	0.034
Fresh water sediment	0.000026 mg/kg dry weight (EUSES v2.1)	< 0.01
Marine sediment	0.0000027 mg/kg dry weight (EUSES v2.1)	< 0.01
Soil	0.0000003 mg/kg dry weight (EUSES v2.1)	< 0.001
Sewage treatment plant	< 0.0000001 mg/L (EUSES v2.1)	< 0.001

9.3.2. Worker exposure: Use in closed process, no likelihood of exposure (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.018 mg/m ³ (EASY TRA v4.1)	0.102
dermal	systemic	long-term	< 0.001 mg/kg bw/day (EASY TRA v4.1)	0.007

9.3.3. Worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.097 mg/m ³ (ECETOC TRA)	0.541
dermal	systemic	long-term	0.003 mg/kg bw/day (ECETOC TRA)	0.069

9.3.4. Worker exposure: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) (PROC5)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.037 mg/m ³	0.203

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			(ECETOC TRA worker v3)	
dermal	systemic	long-term	0.007 mg/kg bw/day (ECETOC TRA worker v3)	0.137

9.3.5. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	0.037 mg/m ³ (ECETOC TRA worker v3)	0.203
dermal	systemic	long-term	0.007 mg/kg bw/day (ECETOC TRA worker v3)	0.137

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

Fulfilling the above conditions the downstream user is deemed to work safely inside the boundaries set by this exposure scenario.

Other conditions should only be considered if the downstream user implements or recommends an exposure scenario which includes as a minimum the conditions described in this exposure scenario.