

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

LANXESS

Energizing Chemistry

Anderol 497

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 13.02.2020 |
| 1.8 | 05.10.2020 | 000000009398 | Date of first issue: 17.10.2011 |

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

1.1 Product identifier

Trade name : Anderol 497

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

Use of the Sub-
stance/Mixture : Lubricant, Additive

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

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) |
|---------------------|---|--|--------------------------|
| N-1-naphthylaniline | 90-30-2 201-983-0 01-2119488704-27-xxxx | Acute Tox. 4; H302 Skin Sens. 1B; H317 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1 | >= 0.25 - < 1 |

For explanation of abbreviations see section 16.

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SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : No hazards which require special first aid measures.
- If inhaled : Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion.
If symptoms persist, call a physician.
- In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : None known.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : For specialist advice physicians should contact the Poisons Information Service.
-

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Wear suitable protective equipment.

6.2 Environmental precautions

Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Wipe up with absorbent material (e.g. cloth, fleece).
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of work-day.

Dust explosion class : No data available

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. Keep in a dry place. Store at room temperature.

Storage period : 5 y

Further information on storage stability : Keep in a dry place.

7.3 Specific end use(s)

Specific use(s) : Raw material for industry

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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 |
|---------------------|-------------------|-----------------|----------------------------|-------------------------|
| 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 |
| | 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 |
|---------------------|---------------------------|---------------|
| 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 : Eye wash bottle with pure water
Tightly fitting safety goggles

Hand protection
Remarks : Polyvinyl alcohol or nitrile- butyl-rubber gloves The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. Before removing gloves clean them with soap and water.

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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Respiratory protection : 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 | : | oily |
| Colour | : | light yellow |
| Odour | : | ester-like |
| Odour Threshold | : | Not relevant |
| pH | : | Not applicable |
| Pour point | : | -42 °C |
| Boiling point/boiling range | : | No data available |
| Flash point | : | 248 °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 vapour density | : | No data available |
| Relative density | : | 0.949 (15 °C) |
| Density | : | 0.949 g/cm ³ (15 °C) |
| Solubility(ies) | | |
| Water solubility | : | No data available |
| Solubility in other solvents | : | No data available |
| Partition coefficient: n-octanol/water | : | No data available |
| Auto-ignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| Viscosity | | |

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Viscosity, dynamic : 5.6 - 74.8 mPa.s (40 - 100 °C)
Method: ASTM D 445

Viscosity, kinematic : 70.8 mm²/s (40 °C)
Method: ASTM D 445

9.2 Other information

Self-Accelerating decomposition temperature (SADT) : GLP: No information available.

Flammability (liquids) : No data available

Oxidizing potential : No information available.

Dust explosion class : No data available

Metal corrosion rate : Not corrosive to metals

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if used as directed.

10.2 Chemical stability

No decomposition if stored normally.

10.3 Possibility of hazardous reactions

Hazardous reactions : No decomposition if used as directed.

10.4 Conditions to avoid

Conditions to avoid : Contamination

10.5 Incompatible materials

Materials to avoid : Contamination

10.6 Hazardous decomposition products

No decomposition if stored normally.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity : Remarks: Not classified due to lack of data.

Acute inhalation toxicity : Remarks: Not classified due to lack of data.

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Acute dermal toxicity : Remarks: Not classified due to lack of data.

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

Product:

Remarks : According to the classification criteria of the European Union, the product is not considered as being a skin irritant.

Components:

N-1-naphthylaniline:

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

Serious eye damage/eye irritation

Product:

Remarks : According to the classification criteria of the European Union, the product is not considered as being an eye irritant.

Components:

N-1-naphthylaniline:

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

Respiratory or skin sensitisation

Components:

N-1-naphthylaniline:

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

Germ cell mutagenicity

Product:

Germ cell mutagenicity- Assessment : Not classified due to lack of data.

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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

Product:

Carcinogenicity - Assessment : Not classified due to lack of data.

Components:

N-1-naphthylaniline:

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

Reproductive toxicity

Product:

Reproductive toxicity - Assessment : Not classified due to lack of data.

STOT - single exposure

Product:

Assessment : Not classified due to lack of data.

STOT - repeated exposure

Product:

Assessment : Not classified due to lack of data.

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Components:

N-1-naphthylaniline:

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

Aspiration toxicity

Product:

No aspiration toxicity classification

Further information

Product:

Remarks : No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Components:

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 : NOEC: 0.02 mg/l

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aquatic invertebrates (Chronic toxicity) Exposure time: 21 d
Species: Daphnia magna (Water flea)
Analytical monitoring: yes

M-Factor (Chronic aquatic toxicity) : 1

12.2 Persistence and degradability

Product:

Biodegradability : Result: No data available

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

Product:

Bioaccumulation : Remarks: No data available

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

Product:

Mobility : Remarks: No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered

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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 : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

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.

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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
- 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 : On the inventory, or 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 : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory
- TCSI : On the inventory, or in compliance with the inventory
- US.TSCA : All substances listed as active on the TSCA inventory

15.2 Chemical safety assessment

No information available.

SECTION 16: Other information

Full text of H-Statements

- H302 : Harmful if swallowed.
- H317 : May cause an allergic skin reaction.

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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.

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 Regulation; 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

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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; Formulation of preparations; Lubricants, greases, release products; (N-1-naphthylaniline, CAS: 90-30-2). |
| ES 2 | Use at industrial sites; General exposures; Lubricants, greases, release products; Engine lubricant service; (N-1-naphthylaniline, CAS: 90-30-2). |
| ES 3 | Widespread use by professional workers; General exposures; Lubricants, greases, release products; Engine lubricant service; In-door use; (N-1-naphthylaniline, CAS: 90-30-2). |
| ES 4 | Widespread use by professional workers; General exposures; Lubricants, greases, release products; Engine lubricant service; Out-door use; (N-1-naphthylaniline, CAS: 90-30-2). |
| ES 5 | Use at industrial sites; General exposures (open systems); Lubricants, greases, release products; Corrosion inhibitors; Dipping; Spraying; Rolling, Brushing; (N-1-naphthylaniline, CAS: 90-30-2). |
| ES 6 | Widespread use by professional workers; General exposures (open systems); Lubricants, greases, release products; Corrosion inhibitors; Dipping; Spraying; Rolling, Brushing; Indoor use. |
| ES 7 | Widespread use by professional workers; General exposures (open systems); Lubricants, greases, release products; Corrosion inhibitors; Dipping; Spraying; Rolling, Brushing; Out-door use. |
| ES 8 | Use at industrial sites; Lubricants, greases, release products; Treatment by heating; (open systems). |

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

1.1. Title section

| | |
|-------------------------------|---|
| Exposure Scenario name | : Formulation of preparations, Lubricants, greases, release products |
| Structured Short Title | : Formulation or re-packing; Formulation of preparations; Lubricants, greases, release products; (N-1-naphthylaniline, CAS: 90-30-2). |
| Substance | : N-1-naphthylaniline <u>EC-No.:</u> 201-983-0 <u>Registration number:</u> 01-2119488704-27-xxxx |

| 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)

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| | |
|--|--|
| 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 |
| 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 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 % | |

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 |

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| | | |
|--|---|---|
| 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. 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 % | | |

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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 | |

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% | |

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| | |
|--|--|
| 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. 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 | |

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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 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 | |

1.2.7. 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 | |

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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). | |
| 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. | |

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| | |
|--|--|
| 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 | |

1.2.10. 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 | |

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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 |
| 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 |
|----------------|---------------|--------------------|-------------------|-----|
|----------------|---------------|--------------------|-------------------|-----|

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| | | tor | mate | |
|------------|----------|-----------|--|-------|
| 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 |

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 |

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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 (RISKOFDERM v2.1) | 0.336 |

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; General exposures; Lubricants, greases, release products; Engine lubricant service; (N-1-naphthylaniline, CAS: 90-30-2).

2.1. Title section

| | |
|-------------------------------|---|
| Exposure Scenario name | : General exposures, Lubricants, greases, release products, Engine lubricant service |
| Structured Short Title | : Use at industrial sites; General exposures; Lubricants, greases, release products; Engine lubricant service; (N-1-naphthylaniline, CAS: 90-30-2). |
| Substance | : N-1-naphthylaniline <u>EC-No.:</u> 201-983-0 <u>Registration number:</u> 01-2119488704-27-xxxx |

| 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 |

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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 | : Municipal sewage treatment plant |
| 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 % | |

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. | |

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| 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 | |

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)

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| | |
|--|-------------------------------|
| 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 |
| 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. | |

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| 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 | |

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 |

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2.3.3. 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 |

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: Widespread use by professional workers; General exposures; Lubricants, greases, release products; Engine lubricant service; In-door use; (N-1-naphthylaniline, CAS: 90-30-2).

3.1. Title section

| | |
|-------------------------------|---|
| Exposure Scenario name | : General exposures, Lubricants, greases, release products, Engine lubricant service, Indoor use |
| Structured Short Title | : Widespread use by professional workers; General exposures; Lubricants, greases, release products; Engine lubricant service; In-door use; (N-1-naphthylaniline, CAS: 90-30-2). |
| Substance | : N-1-naphthylaniline <u>EC-No.:</u> 201-983-0 <u>Registration number:</u> 01-2119488704-27-xxxx |

| 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 | PROC8a |
| CS 5 | Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities | PROC8b |
| CS 6 | 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: 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 | : 15000 kg |

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| | |
|--|--|
| uses | |
| Release type | : Intermittent use/release |
| Emission days | : 365 |
| 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 |
| 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 0.01 % | |
| Emission or Release Factor: Water Worst case assumption 0.05 % | |
| Emission or Release Factor: Soil Worst case assumption 0.1 % | |

3.2.2. 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 | |

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| | |
|--|-----------------------|
| 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 | : 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 | |

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3.2.4. 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 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 (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 |
| 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. | |

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| 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 | |

3.2.6. 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 | |
| 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 | |

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3.3. Exposure estimation and reference to its source

3.3.1. 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 |

3.3.2. 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 |

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 non-dedicated facilities (PROC8a)

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| 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 |

3.3.5. 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 | 0.055 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 |

3.3.6. 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: Widespread use by professional workers; General exposures; Lubricants, greases, release products; Engine lubricant service; Out-door use; (N-1-naphthylaniline, CAS: 90-30-2).

4.1. Title section

| | |
|-------------------------------|--|
| Exposure Scenario name | : General exposures, Lubricants, greases, release products, Engine lubricant service, Outdoor use |
| Structured Short Title | : Widespread use by professional workers; General exposures; Lubricants, greases, release products; Engine lubricant service; Out-door use; (N-1-naphthylaniline, CAS: 90-30-2). |
| Substance | : N-1-naphthylaniline <u>EC-No.:</u> 201-983-0 <u>Registration number:</u> 01-2119488704-27-xxxx |

| Environment | | |
|-------------|--|--------|
| CS 1 | Wide dispersive outdoor use of substances in closed systems | ERC9b |
| 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 | PROC8a |
| CS 5 | Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities | PROC8b |
| CS 6 | Heat and pressure transfer fluids in dispersive, professional use but closed systems | PROC20 |

4.2. Conditions of use affecting exposure

4.2.1. Control of environmental exposure: Wide dispersive outdoor use of substances in closed systems (ERC9b)

| 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 | : 15000 kg |

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| | |
|--|--|
| uses | |
| Release type | : Intermittent use/release |
| Emission days | : 365 |
| Conditions and measures related to sewage treatment plant | |
| STP type | : none |
| 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 0.01 % | |
| Emission or Release Factor: Water Worst case assumption 0.05 % | |
| Emission or Release Factor: Soil Worst case assumption 0.1 % | |

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 | |
| Ensure operatives are trained to minimise exposures. | |
| Conditions and measures related to personal protection, hygiene and health evaluation | |

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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 : 240 cm²

Indoor or outdoor use : Outdoor

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

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 cm²)

Indoor or outdoor use : Outdoor

4.2.4. 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 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

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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. | | |
| 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 | : | Outdoor |

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

| | | |
|---|---|-----------------------------|
| Product (article) characteristics | | |
| Covers 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 | | |
| 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 | : | Outdoor |

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

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| | |
|---|--|
| 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 | |
| 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 | : Outdoor |

4.3. Exposure estimation and reference to its source

4.3.1. Environmental release and exposure: Wide dispersive outdoor use of substances in closed systems (ERC9b)

| 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 |

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

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| Exposure route | Health effect | Exposure indicator | Exposure estimate | RCR |
|----------------|---------------|--------------------|--|-------|
| inhalative | systemic | long-term | 0.006 mg/m ³ (EASY TRA v4.1) | 0.036 |
| 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 | 0.064 mg/m ³ (EASY TRA v4.1) | 0.355 |
| dermal | systemic | long-term | 0.013 mg/kg bw/day (EASY TRA v4.1) | 0.274 |

4.3.4. 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 | 0.038 mg/m ³ (ECETOC TRA worker v3) | 0.213 |
| dermal | systemic | long-term | 0.008 mg/kg bw/day (ECETOC TRA worker v3) | 0.165 |

4.3.5. 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 | 0.038 mg/m ³ (ECETOC TRA worker v3) | 0.213 |
| dermal | systemic | long-term | 0.008 mg/kg bw/day (ECETOC TRA worker v3) | 0.165 |

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4.3.6. 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 | 0.038 mg/m ³ (EASY TRA v4.1) | 0.213 |
| dermal | systemic | long-term | 0.017 mg/kg bw/day (EASY TRA v4.1) | 0.343 |

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; General exposures (open systems); Lubricants, greases, release products; Corrosion inhibitors; Dipping; Spraying; Rolling, Brushing; (N-1-naphthylaniline, CAS: 90-30-2).

5.1. Title section

| | |
|-------------------------------|--|
| Exposure Scenario name | : General exposures (open systems), Use of lubricants and greases, Corrosion inhibitors, Rolling, Brushing, Dipping, Spraying |
| Structured Short Title | : Use at industrial sites; General exposures (open systems); Lubricants, greases, release products; Corrosion inhibitors; Dipping; Spraying; Rolling, Brushing; (N-1-naphthylaniline, CAS: 90-30-2). |
| Substance | : N-1-naphthylaniline EC-No.: 201-983-0 Registration number: 01-2119488704-27-xxxx |

| 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 | Treatment of articles by dipping and pouring | PROC13 |

5.2. Conditions of use affecting exposure

5.2.1. 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 |

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| | |
|--|--|
| 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. | |
| 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 % | |

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). |

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| | |
|--|-----------------------|
| 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 cm ² |
| 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 |

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Assumes a good basic standard of occupational hygiene is implemented

5.2.4. 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 |
| 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 |
| 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 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 | |

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| | |
|--|--|
| 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 | |

5.2.6. 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 |
| 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 | |

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5.2.7. 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 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 | : Palms of both hands (480 cm ²) |
| Indoor or outdoor use | : Indoor |
| Assumes a good basic standard of occupational hygiene is implemented | |

5.3. Exposure estimation and reference to its source

5.3.1. 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 | < 0.001 |

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| | | |
|------------------------|--|---------|
| | (EASY TRA v4.1) | |
| 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 |

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: 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 |

5.3.5. 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 |
|----------------|---------------|--------------------|-------------------|-----|
|----------------|---------------|--------------------|-------------------|-----|

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| | | tor | mate | |
|------------|----------|-----------|---|-------|
| inhalative | systemic | long-term | 0.037 mg/m ³ (ECETOC TRA worker v3) | 0.203 |
| dermal | systemic | long-term | 0.003 mg/kg bw/day (ECETOC TRA worker v3) | 0.069 |

5.3.6. 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 |

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

| 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 | 0.014 mg/kg bw/day (ECETOC TRA worker v3) | 0.274 |

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: Widespread use by professional workers; General exposures (open systems); Lubricants, greases, release products; Corrosion inhibitors; Dipping; Spraying; Rolling, Brushing; Indoor use.

6.1. Title section

| | |
|-------------------------------|--|
| Exposure Scenario name | : General exposures (open systems), Use of lubricants and greases, Corrosion inhibitors, Rolling, Brushing, Dipping, Spraying, Indoor use |
| Structured Short Title | : Widespread use by professional workers; General exposures (open systems); Lubricants, greases, release products; Corrosion inhibitors; Dipping; Spraying; Rolling, Brushing; Indoor use. |
| Substance | : N-1-naphthylaniline EC-No.: 201-983-0 Registration number: 01-2119488704-27-xxxx |

| 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 non-dedicated facilities | PROC8a |
| CS 5 | Roller application or brushing | PROC10 |
| CS 6 | Treatment of articles by dipping and pouring | PROC13 |

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 |

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| | | |
|--|---|--|
| 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. | | |
| 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 | | |

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| | |
|--|-----------------------|
| 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 | |
| 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 | |

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6.2.4. 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 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 | |

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 | |

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| | |
|--|-----------------------|
| 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 | : 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. | |

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

| | |
|--|---|
| 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 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 | |

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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 |

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 |

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6.3.4. 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 | 0.055 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 |

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

| Exposure route | Health effect | Exposure indicator | Exposure estimate | RCR |
|----------------|---------------|--------------------|---|-------|
| inhalative | systemic | long-term | 0.091 mg/m ³ (ECETOC TRA worker v3) | 0.508 |
| dermal | systemic | long-term | 0.014 mg/kg bw/day (ECETOC TRA worker v3) | 0.274 |

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; General exposures (open systems); Lubricants, greases, release products; Corrosion inhibitors; Dipping; Spraying; Rolling, Brushing; Outdoor use.

7.1. Title section

| | |
|-------------------------------|---|
| Exposure Scenario name | : General exposures (open systems), Use of lubricants and greases, Corrosion inhibitors, Rolling, Brushing, Dipping, Spraying, Outdoor use |
| Structured Short Title | : Widespread use by professional workers; General exposures (open systems); Lubricants, greases, release products; Corrosion inhibitors; Dipping; Spraying; Rolling, Brushing; Outdoor use. |
| Substance | : N-1-naphthylaniline EC-No.: 201-983-0 Registration number: 01-2119488704-27-xxxx |

| | | |
|--------------------|--|--------|
| Environment | | |
| CS 1 | Wide dispersive outdoor use of processing aids in open systems | ERC8d |
| 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 |

7.2. Conditions of use affecting exposure

7.2.1. Control of environmental exposure: Wide dispersive outdoor use of processing aids in open systems (ERC8d)

| | |
|---|----------------------------|
| 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 |

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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 | : none |
| 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 0.010 % | |
| Emission or Release Factor: Water Worst case assumption 0.050 % | |
| Emission or Release Factor: Soil Worst case assumption 0.100 % | |

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 | |
| Handle substance within a closed system. | |
| 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 90 % | |
| Other conditions affecting workers exposure | |
| Body parts exposed | : 240 cm ² |
| Indoor or outdoor use | : Outdoor |
| 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 |
| 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 | : Outdoor |
| Assumes a good basic standard of occupational hygiene is implemented | |

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

| |
|--|
| 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 | |
| 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 % | |
| Other conditions affecting workers exposure | |
| Body parts exposed | : 960 cm ² |
| Indoor or outdoor use | : Outdoor |
| 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. | |

7.3. Exposure estimation and reference to its source

7.3.1. Environmental release and exposure: Wide dispersive outdoor use of processing aids in open systems (ERC8d)

| 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 | < 0.001 |

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| | | |
|------|--|---------|
| | (EASY TRA v4.1) | |
| Soil | < 0.0000001 mg/kg dry weight (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 | 0.006 mg/m ³ (EASY TRA v4.1) | 0.036 |
| dermal | systemic | long-term | < 0.001 mg/kg bw/day (EASY TRA v4.1) | 0.007 |

7.3.3. 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 | 0.064 mg/m ³ (EASY TRA v4.1) | 0.355 |
| dermal | systemic | long-term | 0.014 mg/kg bw/day (EASY TRA v4.1) | 0.274 |

7.3.4. 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 |

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: Use at industrial sites; Lubricants, greases, release products; Treatment by heating; (open systems).

8.1. Title section

| | |
|-------------------------------|---|
| Exposure Scenario name | : Treatment by heating, Lubricants, greases, release products, (open systems) |
| Structured Short Title | : Use at industrial sites; Lubricants, greases, release products; Treatment by heating; (open systems). |
| Substance | : N-1-naphthylaniline <u>EC-No.:</u> 201-983-0 <u>Registration number:</u> 01-2119488704-27-xxxx |

| 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 |

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 | |
| Product must not be released into water without pre-treatment. | |

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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 < 0.001 % | |
| 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 % | |
| 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 | |

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 |
| Amount used (or contained in articles), frequency and duration of use/exposure | |
| Duration | : Exposure duration < 240 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 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: 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 % | |

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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 | |
| Process Temperature 123 °C | |

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 |

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| | | | | |
|--------|----------|-----------|---------------------------------------|-------|
| 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 |
|----------------|---------------|--------------------|---|-------|
| 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 |

8.3.5. 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.