

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



ANDEROL 2100 HTCL

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.09.2023	203000014853	Country / Language: DE / 6N (EN)

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

1.1 Product identifier

Trade name : ANDEROL 2100 HTCL

Product code : 000000000062597710

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

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

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

1.3 Details of the supplier of the safety data sheet

Company : Anderol B.V.
Groot Egtenrayseweg 23
5928 PA Venlo
Netherlands
+31 77 396 0340

Responsible Department : +49 221 8885 2288
infosds@lanxess.com

1.4 Emergency telephone number

Emergency telephone number : For 24/7 multilingual emergency please call
CHEMTREC EMEA: +44 20 3885 0382 and mention CCN
1001748.

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:**

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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, 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-ar-methyl-. 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.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
O,O,O-triphenyl phosphorothioate	597-82-0 209-909-9 01-2119979545-21	Aquatic Chronic 4; H413	>= 1 - < 2,5
N-1-naphthylaniline	90-30-2 201-983-0 01-2119488704-27	Acute Tox. 4; H302 Skin Sens. 1B; H317 STOT RE 2; H373 (Blood, Kidney) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 0,25 - < 1

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		Acute toxicity estimate	
		Acute oral toxicity: 1.625 mg/kg	
1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-ar-methyl-	94270-86-7 01-2119982395-25	Skin Irrit. 2; H315 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 2; H411 M-Factor (Acute aquatic toxicity): 1	>= 0,1 - < 0,25

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- If inhaled : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If symptoms persist, call a physician.
If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.
- In case of skin contact : Wash off with soap and water.
Remove contaminated clothing and shoes.
Wash contaminated clothing before re-use.
Get medical attention if irritation develops and persists.
- In case of eye contact : Rinse thoroughly with plenty of water, also under the eyelids.
Remove contact lenses.
If eye irritation persists, consult a specialist.
- If swallowed : Rinse mouth with water.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.
Consult a physician if necessary.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : Get medical attention if symptoms appear.
- Risks : No information available.

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4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.
For specialist advice physicians should contact the Poisons Information Service.
The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Burning produces irritant fumes.

Hazardous combustion products : Carbon dioxide (CO₂)
Carbon monoxide
Sulphur oxides
Oxides of phosphorus
Nitrogen oxides (NO_x)

5.3 Advice for firefighters

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
Material can create slippery conditions.

6.2 Environmental precautions

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

6.3 Methods and material for containment and cleaning up

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

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national regulations (see section 13).

6.4 Reference to other sections

For disposal considerations see section 13., Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Annex should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- | | |
|-------------------------|--|
| Advice on safe handling | : Avoid contact with skin, eyes and clothing.
Wear personal protective equipment.
Do not use pressure to empty drums.
Ensure all equipment is electrically grounded before beginning transfer operations. |
| Hygiene measures | : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace. |

7.2 Conditions for safe storage, including any incompatibilities

- | | |
|---|---|
| Requirements for storage areas and containers | : Keep containers tightly closed in a dry, cool and well-ventilated place. Ambient temperature Keep away from fire, sparks and heated surfaces. |
| Storage class (TRGS 510) | : 10, Combustible liquids |
| Further information on storage stability | : Stable at normal ambient temperature and pressure. |

7.3 Specific end use(s)

- | | |
|-----------------|-----------------------------|
| Specific use(s) | : Raw material for industry |
|-----------------|-----------------------------|

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Annex should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
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O,O,O-triphenyl phosphorothioate	597-82-0	AGW (Inhalable fraction)	20 mg/m3	DE TRGS 900
Peak-limit: excursion factor (category): 2;(II)				
N-1-naphthylaniline	90-30-2	AGW (Inhalable fraction)	2 mg/m3	DE TRGS 900
Peak-limit: excursion factor (category): 2;(II)				
Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child, Substance sensitizing through the skin				

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

Substance name	End Use	Exposure routes	Potential health effects	Value
bis(4-(1,1,3,3-tetramethylbutyl)phenyl)amine	Workers	Inhalation	Long-term systemic effects	49,3 mg/m3
	Workers	dermal	Long-term systemic effects	14 mg/kg bw/day
	General exposures	Inhalation	Long-term systemic effects	7,4 mg/m3
	General exposures	dermal	Long-term systemic effects	5 mg/kg bw/day
	General exposures	oral	Long-term systemic effects	5 mg/kg bw/day
N-1-naphthylaniline	Workers	Inhalation	Long-term exposure, Systemic effects	0,08 mg/m3
	Workers	Inhalation	Short-term exposure, Systemic effects	44 mg/m3
	Workers	Dermal	Long-term exposure, Systemic effects	0,02 mg/kg bw/day
	Workers	Dermal	Short-term exposure, Systemic effects	6,67 mg/kg bw/day
	Consumers	Inhalation	Long-term exposure, Systemic effects	0,015 mg/m3
	Consumers	Inhalation	Short-term exposure, Systemic effects	33 mg/m3
	Consumers	Dermal	Long-term exposure, Systemic effects	0,008 mg/kg bw/day
	Consumers	Dermal	Short-term exposure, Systemic effects	3,33 mg/kg bw/day
	Consumers	Oral	Long-term exposure, Systemic effects	0,008 mg/kg bw/day
	Consumers	Oral	Short-term exposure, Systemic effects	2 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	1,3 mg/m3
	Workers	dermal	Long-term systemic effects	0,4 mg/kg

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	General exposures	Inhalation	Long-term systemic effects	0,3 mg/m ³
	General exposures	dermal	Long-term systemic effects	0,2 mg/kg
	General exposures	oral	Long-term systemic effects	0,2 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
	Sewage treatment plant	100 mg/l
	Fresh water sediment	0,0344 mg/kg dry weight (d.w.)
	Marine sediment	0,00344 mg/kg dry weight (d.w.)
	Soil	0,0068 mg/kg dry weight (d.w.)
	Secondary Poisoning	7,173 mg/kg food
1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-ar-methyl-	Freshwater	0,009 mg/l
	Marine water	0,001 mg/l
	Sewage treatment plant	0,69 mg/l
	Fresh water sediment	0,127 mg/kg dry weight
	Marine sediment	0,013 mg/kg dry weight
	Soil	0,02 mg/kg dry weight

8.2 Exposure controls

Engineering measures

Use with adequate ventilation.

Personal protective equipment

Eye/face protection : Safety glasses with side-shields
Tightly fitting safety goggles

Hand protection

Material : Impervious butyl rubber gloves

Remarks : Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Request information on glove permeation properties from the glove supplier.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

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Skin and body protection	:	Long sleeved clothing
Respiratory protection	:	not required under normal use In the case of vapour formation use a respirator with an approved filter. In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.
Protective measures	:	These recommendations apply to the product as supplied. Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Please follow all applicable local/national requirements when selecting protective measures for a specific workplace.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Colour	:	clear, yellow
Odour	:	characteristic
Odour Threshold	:	No data available
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
		No data available
Lower explosion limit / Lower flammability limit	:	No data available
		No data available
Flash point	:	262 °C
Decomposition temperature	:	No data available
pH	:	No data available
Viscosity		
Viscosity, dynamic	:	12,0 - 100,0 mPa,s (40 - 100 °C)

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Method: ASTM D 445

Viscosity, kinematic : 94,9 mm²/s (40 °C)

Solubility(ies)
Water solubility : slightly soluble

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Vapour pressure : No data available

Relative density : No data available

Density : 0,915 g/cm³ (15 °C)

9.2 Other information

Explosives : No data available

Oxidizing properties : No data available

Flammable solids
Burning number : No data available

Self-ignition : No data available

Evaporation rate : No data available

Miscibility with water : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : None reasonably foreseeable.

10.4 Conditions to avoid

Conditions to avoid : Direct sources of heat.

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Strong sunlight for prolonged periods.
Exposure to air or moisture over prolonged periods.
Contamination

10.5 Incompatible materials

Materials to avoid : Strong acids and oxidizing agents

10.6 Hazardous decomposition products

Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke.
Oxides of phosphorus

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Not classified based on available information.

Components:

O,O,O-triphenyl phosphorothioate:

Acute oral toxicity : LD50 (Rat, male and female): > 100000 mg/kg body weight
Method: OECD Test Guideline 401
GLP: no

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: No mortality observed at this dose.

N-1-naphthylaniline:

Acute oral toxicity : LD50 (Rat, male): 1.625 mg/kg

Acute dermal toxicity : LD50 (Rabbit, male): > 5.000 mg/kg

1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-ar-methyl-:

Acute oral toxicity : LD50 (Rat): 3.313 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Not classified based on available information.

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Components:

O,O,O-triphenyl phosphorothioate:

Species	: Rabbit
Exposure time	: 24 h
Method	: OECD Test Guideline 404
Result	: slight irritation
GLP	: no

N-1-naphthylaniline:

Species	: Rabbit
Method	: OECD Test Guideline 404
Result	: No skin irritation
GLP	: no

1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-ar-methyl-:

Species	: Rabbit
Exposure time	: 24 h
Result	: Irritating to skin.

Serious eye damage/eye irritation

Not classified based on available information.

Components:

O,O,O-triphenyl phosphorothioate:

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

N-1-naphthylaniline:

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

1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-ar-methyl-:

Species	: Rabbit
Result	: No eye irritation

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

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Components:

O,O,O-triphenyl phosphorothioate:

Exposure routes	: Skin contact
Species	: Guinea pig
Method	: Regulation (EC) No. 440/2008, Annex, B.6
Result	: Skin sensitisers
GLP	: yes

N-1-naphthylaniline:

Test Type	: Maximisation Test
Exposure routes	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: The product is a skin sensitiser, sub-category 1B.
GLP	: no

1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-ar-methyl-:

Exposure routes	: Dermal
Species	: Guinea pig
Result	: May cause sensitisation by skin contact.

Germ cell mutagenicity

Not classified based on available information.

Components:

O,O,O-triphenyl phosphorothioate:

Genotoxicity in vitro	: Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative GLP: yes
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	Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative GLP: yes
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	Test system: Human lymphocytes Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 487 Result: negative GLP: yes
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	Test system: Chinese hamster fibroblasts Metabolic activation: with and without metabolic activation
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Method: OECD Test Guideline 473

Result: negative

GLP: yes

Test system: Escherichia coli

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

GLP: yes

N-1-naphthylaniline:

Genotoxicity in vitro

: Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: No information available.

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

GLP: No information available.

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

GLP: No information available.

Genotoxicity in vivo

: Test Type: dominant lethal test
Species: Mouse (male)
Application Route: Intraperitoneal
Method: OECD Test Guideline 478
Result: negative
GLP: No information available.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

Components:

O,O,O-triphenyl phosphorothioate:

Effects on fertility

: Test Type: Fertility/early embryonic development
Species: Rat, male
Application Route: Oral

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Dose: 100-300-1000 mg/kg bw/day
General Toxicity - Parent: NOAEL: 300 mg/kg body weight
Fertility: NOAEL: 300 mg/kg body weight
Early Embryonic Development: NOAEL: 300 mg/kg body weight
Target Organs: Thyroid, Liver
Method: OECD Test Guideline 421
Result: No effects on fertility and early embryonic development were detected.
GLP: yes

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat, female
Application Route: Oral
Dose: 100-300-1000 mg/kg bw/day
General Toxicity Maternal: NOAEL: 1.000 mg/kg body weight
Developmental Toxicity: NOAEL: 1.000 mg/kg body weight
Method: OECD Test Guideline 414
Result: negative
GLP: yes

N-1-naphthylaniline:

Effects on foetal development : Test Type: Pre-natal
Species: Rat, female
Application Route: Oral
Dose: 15 - 50 - 150 milligram per kilogram
General Toxicity Maternal: NOAEL: 50 mg/kg bw/day
Developmental Toxicity: NOAEL: 150 mg/kg bw/day
Method: OECD Test Guideline 414
GLP: yes

1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-ar-methyl-:

Effects on fertility : General Toxicity - Parent: NOAEL: 45 mg/kg body weight
Fertility: NOAEL: 150 mg/kg body weight
Early Embryonic Development: NOAEL: 45 mg/kg body weight

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Components:

N-1-naphthylaniline:

Exposure routes : Oral
Target Organs : Blood, Kidney
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

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Repeated dose toxicity

Components:

O,O,O-triphenyl phosphorothioate:

Species	: Rat, male
NOAEL	: 39,5 mg/kg bw/day
Application Route	: Oral
Exposure time	: 13 weeks
Number of exposures	: daily
Dose	: 1% - 50% - 100%
Method	: OECD Test Guideline 408
GLP	: yes
Target Organs	: Thyroid

N-1-naphthylaniline:

Species	: Rat, male and female
LOAEL	: 5 mg/kg
Application Route	: Oral
Exposure time	: 90 d
Number of exposures	: daily
Dose	: 5 - 25 - 125 mg/kg bw/day
Method	: OECD Test Guideline 408
GLP	: yes
Target Organs	: Blood, Kidney
Assessment	: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.
Remarks	: Subchronic toxicity

1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-ar-methyl-:

Species	: Rat
NOAEL	: 45 mg/kg
Application Route	: Oral

Aspiration toxicity

Not classified based on available information.

Product:

No aspiration toxicity classification

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment	: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
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SECTION 12: Ecological information

12.1 Toxicity

Components:

O,O,O-triphenyl phosphorothioate:

- | | | |
|--|---|---|
| Toxicity to fish | : | LC50 (Danio rerio (zebra fish)): > 100 mg/l
End point: mortality
Exposure time: 96 h
Test Type: static test
Analytical monitoring: no
Method: OECD Test Guideline 203
GLP: yes |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): > 100 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Analytical monitoring: no
Method: OECD Test Guideline 202
GLP: yes |
| Toxicity to algae/aquatic plants | : | EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Analytical monitoring: no
Method: OECD Test Guideline 201
GLP: yes |
| Toxicity to microorganisms | : | IC50 (activated sludge): > 100 mg/l
End point: Respiration inhibition
Exposure time: 3 h
Analytical monitoring: no
Method: OECD Test Guideline 209
GLP: no |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOELR: > 5,5 mg/l
Exposure time: 22 d
Species: Daphnia magna (Water flea)
Analytical monitoring: yes
Method: OECD Test Guideline 211
GLP: yes |

Ecotoxicology Assessment

- | | | |
|--------------------------|---|---|
| Chronic aquatic toxicity | : | May cause long lasting harmful effects to aquatic life. |
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N-1-naphthylaniline:

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- | | | |
|--|---|---|
| Toxicity to fish | : | LC50 (Oncorhynchus mykiss (rainbow trout)): 0,44 mg/l
Exposure time: 96 h
Analytical monitoring: no
Remarks: nominal concentration |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 0,3 mg/l
End point: Immobilization
Exposure time: 48 h
Analytical monitoring: no
Remarks: nominal concentration |
| Toxicity to algae/aquatic plants | : | ErC50 (Pseudokirchneriella subcapitata (green algae)): 0,93 mg/l
End point: Growth rate
Exposure time: 96 h
Analytical monitoring: no
Remarks: nominal concentration |
| M-Factor (Acute aquatic toxicity) | : | 1 |
| Toxicity to microorganisms | : | EC50 (activated sludge): > 10.000 mg/l
End point: Respiration inhibition
Exposure time: 3 h
Method: OECD Test Guideline 209 |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC: 0,032 mg/l
End point: Reproduction
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Analytical monitoring: no
Method: OECD Test Guideline 211
GLP: yes
Remarks: nominal concentration |
| M-Factor (Chronic aquatic toxicity) | : | 1 |
- 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-ar-methyl-:**
- | | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Danio rerio (zebra fish)): 1,3 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203 |
| Toxicity to daphnia and other aquatic invertebrates | : | EC10 (Daphnia magna (Water flea)): 1,93 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202 |
| Toxicity to algae/aquatic plants | : | ErC50 (Desmodesmus subspicatus (green algae)): 0,976 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201 |

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EC10 (Desmodesmus subspicatus (green algae)): 0,658 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (Bacteria): 13 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

12.2 Persistence and degradability

Components:

O,O,O-triphenyl phosphorothioate:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge, non-adapted
Result: Inherently biodegradable.
Biodegradation: 17,8 - 19,3 %
Exposure time: 29 d
Method: OECD Test Guideline 301B
GLP: yes

N-1-naphthylaniline:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 14 d
Method: OECD Test Guideline 301C

12.3 Bioaccumulative potential

Components:

O,O,O-triphenyl phosphorothioate:

Bioaccumulation : Bioconcentration factor (BCF): 2.551
GLP: yes

Partition coefficient: n-octanol/water : log Pow: 5 (23 °C)
pH: 6,4
Method: OECD Test Guideline 117
GLP: yes

N-1-naphthylaniline:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Exposure time: 56 d
Bioconcentration factor (BCF): ≥ 427
Method: OECD Test Guideline 305C

Partition coefficient: n- : log Pow: 4,28

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octanol/water

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

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

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

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

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

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Annex should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product	: Dispose of wastes in an approved waste disposal facility. In accordance with local and national regulations. Do not contaminate ponds, waterways or ditches with chemical or used container.
Contaminated packaging	: Dispose of as unused product.

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SECTION 14: Transport information

14.1 UN number or ID number

ADN	: Not regulated as a dangerous good
ADR	: Not regulated as a dangerous good
RID	: Not regulated as a dangerous good
IMDG	: Not regulated as a dangerous good
IATA	: Not regulated as a dangerous good

14.2 UN proper shipping name

ADN	: Not regulated as a dangerous good
ADR	: Not regulated as a dangerous good
RID	: Not regulated as a dangerous good
IMDG	: Not regulated as a dangerous good
IATA	: Not regulated as a dangerous good

14.3 Transport hazard class(es)

ADN	: Not regulated as a dangerous good
ADR	: Not regulated as a dangerous good
RID	: Not regulated as a dangerous good
IMDG	: Not regulated as a dangerous good
IATA	: Not regulated as a dangerous good

14.4 Packing group

ADN	: Not regulated as a dangerous good
ADR	: Not regulated as a dangerous good
RID	: Not regulated as a dangerous good
IMDG	: Not regulated as a dangerous good
IATA (Cargo)	: Not regulated as a dangerous good
IATA (Passenger)	: Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Hazard and Handling Notes. : Not dangerous cargo.
Keep away from acids and oxidizing agents.
Keep separated from foodstuffs.

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14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Conditions of restriction for the following entries should be considered: Number on list 75, 3

Do not use for tattooing purposes.

2-naphthylamine (Number on list 75, 43, 28, 12)

International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors : Not applicable

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).

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Council Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors. : Neither banned nor restricted

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

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Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

Not applicable

Water hazard class (Germany) : WGK 3 highly hazardous to water
Classification according to AwSV, Annex 1 (5)

15.2 Chemical safety assessment

A chemical safety assessment has been carried out for one or more of the substances within this mixture.

SECTION 16: Other information

Full text of H-Statements

H302	: Harmful if swallowed.
H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.
H373	: May cause damage to organs through prolonged or repeated exposure if swallowed.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.
H411	: Toxic to aquatic life with long lasting effects.
H413	: May cause long lasting harmful effects to aquatic life.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
STOT RE	: Specific target organ toxicity - repeated exposure
DE TRGS 900	: Germany. TRGS 900 - Occupational exposure limit values.
DE TRGS 900 / AGW	: Time Weighted Average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; 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;

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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; TECI - Thailand Existing Chemicals 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 data contained in this Safety Data Sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered to be a guidance for processing and does not contain any 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. It is the responsibility of the recipient of the product to ensure that any proprietary rights and existing laws and legislation are observed.

Relevant changes from the previous version are marked on the left side of the Safety Data Sheet with a black double bar in appropriate places.

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Annex

Exposure Scenario (ES)

Number	Title
ES1	Formulation of lubricant additives, lubricants and greases, Industrial (ERC2; PROC1; PROC2; PROC3; PROC4; PROC5; PROC8a; PROC8b; PROC9; PROC15) <u>Structured Short Title:</u> Formulation or re-packing; ATIEL ATC A [i].
ES2	Use of lubricants and greases in vehicles or machinery, Industrial (ERC4; PROC1; PROC2; PROC8b; PROC9) <u>Structured Short Title:</u> Use at industrial sites; ATIEL ATC B [i].
ES3	Use of lubricants and greases in vehicles or machinery, Professional (ERC9a; ERC9b; PROC20; PROC8b; PROC8a; PROC2; PROC1) <u>Structured Short Title:</u> Widespread use by professional workers; ATIEL ATC B [p].
ES4	Use of lubricants in open system, Industrial (ERC4; PROC1; PROC2; PROC8b; PROC9; PROC10; PROC13) <u>Structured Short Title:</u> Use at industrial sites; ATIEL ATC C [i].
ES5	Use of lubricants in open system, Professional (ERC8a; ERC8d; PROC13; PROC10; PROC8a; PROC2; PROC1) <u>Structured Short Title:</u> Widespread use by professional workers; ATIEL ATC C [p].
ES6	Use of lubricants in open high temperature processes, Industrial (ERC4; PROC1; PROC2; PROC8b; PROC13) <u>Structured Short Title:</u> Use at industrial sites; ATIEL ATC D [i].
ES7	Handling and dilution of metalworking fluid concentrates, Industrial (ERC2; PROC1; PROC2; PROC5; PROC8b) <u>Structured Short Title:</u> Formulation or re-packing; ATIEL ATC E [i].
ES8	Use of lubricants in high energy open processes, Industrial (ERC4; PROC1; PROC2; PROC8b; PROC17; PROC18) <u>Structured Short Title:</u> Use at industrial sites; ATIEL ATC F [i].
ES9	Use of lubricants in high energy open processes, Professional (ERC8a; PROC18;

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PROC17; PROC8a; PROC2; PROC1)

Structured Short Title:

Widespread use by professional workers; ATIEL ATC F [p].

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ES1: Formulation of lubricant additives, lubricants and greases, Industrial

1.1. Title section

Structured Short Title	: Formulation or re-packing; ATIEL ATC A [i].
Substance	: N-phenyl-1-naphthylamine REACH No.: 01-2119488704-27 EC-No.: 201-983-0 CAS-No.: 90-30-2

Environmental release category(ies)	: ERC2: Formulation into mixture
Process category(ies)	: PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Chemical production where opportunity for exposure arises PROC5: Mixing or blending in batch processes PROC8a: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities PROC8b: Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent

Contributing Scenario (CS) Environment		
CS1	Formulation into mixture	ERC2
CS2	Formulation into mixture	ERC2

Contributing Scenario (CS) Worker		
CS3	General measures applicable to all activities	PROC0
CS4	Use in closed process	PROC1

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CS5	Continuous process; Batch process; Closed systems	PROC2, PROC3
CS6	Use in semi-closed process with opportunity for exposure; Small package filling; Small scale weighing	PROC4, PROC9
CS7	Use in semi-closed process with opportunity for exposure; with sample collection	PROC4
CS8	Mixing operations	PROC5
CS9	Material transfers; Non-dedicated facility	PROC8a
CS10	Material transfers; Dedicated facility	PROC8b
CS11	Laboratory activities	PROC15

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: Formulation into mixture (ERC2)

Amount used, frequency and duration of use (or from service life)	
Annual amount per site	: 70 t
Daily amount per site	: 233,33 kg
Emission days per year	: 300

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 disposal methods	: External treatment and disposal of waste should comply with applicable local and/or national 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

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1.2.2. Control of environmental exposure: Formulation into mixture (ERC2)

Amount used, frequency and duration of use (or from service life)	
Annual amount per site	: 20 t
Daily amount per site	: 1 t
Emission days per year	: 20

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 disposal methods	: External treatment and disposal of waste should comply with applicable local and/or national 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

1.2.3. Control of worker exposure: General measures applicable to all activities (PROC0)

Technical and organisational conditions and measures
Containment in place Minimise number of staff exposed Ensure segregation of worker from the source. Provide extract ventilation to points where emissions occur. Good standard of general ventilation. Consider technical advances and process upgrades (including automation) for the elimination of re-leases. Avoid contact with contaminated tools and objects. Regular cleaning of equipment and work area. Only properly trained and authorized personnel should handle the substance. Substance-handling procedures shall be well documented and supervised. Assumes a good basic standard of occupational hygiene is implemented

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Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable protective clothing.
Wear suitable gloves.
Wear suitable respiratory protection.
Use suitable eye protection.

For further specification, refer to section 8 of the SDS.

1.2.4. Control of worker exposure: Use in closed process (PROC1)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 100 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 8 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Dermal - minimum efficiency of 95 %

For further specification, refer to section 8 of the SDS.

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Other conditions affecting workers exposure

Indoor or outdoor use	:	Indoor use
Ventilation rate	:	Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

1.2.5. Control of worker exposure: Continuous process; Batch process; Closed systems (PROC2, PROC3)

Product (article) characteristics

Concentration of substance in product	:	Covers concentrations up to 27 %
Physical form of product	:	Liquid

Amount used, frequency and duration of use (or from service life)

Duration	:	Covers exposure up to 8 h
Use frequency	:	5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Local exhaust ventilation
Inhalation - minimum efficiency of 90 %

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.

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Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Dermal - minimum efficiency of 95 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

1.2.6. Control of worker exposure: Use in semi-closed process with opportunity for exposure; Small package filling; Small scale weighing (PROC4, PROC9)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 27 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 4 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

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Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Local exhaust ventilation
Inhalation - minimum efficiency of 90 %

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, category 1.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.
Dermal - minimum efficiency of 98 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

1.2.7. Control of worker exposure: Use in semi-closed process with opportunity for exposure; with sample collection (PROC4)

Remarks:

With sample collection

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 27 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

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Duration	:	Covers exposure up to 15 min
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Use frequency	:	5 days per week
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Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, category 1.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Dermal - minimum efficiency of 95 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use	:	Indoor use
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Ventilation rate	:	Provide a basic standard of general ventilation (1 to 3 air changes per hour).
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Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

1.2.8. Control of worker exposure: Mixing operations (PROC5)

Product (article) characteristics

Concentration of substance in product	:	Covers concentrations up to 10 %
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Physical form of product	: Liquid
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Amount used, frequency and duration of use (or from service life)

Duration	: Covers exposure up to 4 h
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Use frequency	: 5 days per week
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Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Local exhaust ventilation
Inhalation - minimum efficiency of 90 %

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, category 1.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.
Dermal - minimum efficiency of 98 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use	: Indoor use
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Ventilation rate	: Provide a basic standard of general ventilation (1 to 3 air changes per hour).
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Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

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1.2.9. Control of worker exposure: Material transfers; Non-dedicated facility (PROC8a)

Product (article) characteristics	
Concentration of substance in product	: Covers concentrations up to 100 %
Physical form of product	: Solid, low dustiness

Amount used, frequency and duration of use (or from service life)	
Duration	: Covers exposure up to 45 min
Use frequency	: 5 days per week

Technical and organisational conditions and measures	
The product is a skin sensitiser, sub-category 1B. Therefore, exposure should be minimised by appropriate risk management measures. For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.	
Only trained and authorised personnel is allowed to handle the substance. Substance-handling procedures shall be well documented and strictly supervised.	
Local exhaust ventilation Inhalation - minimum efficiency of 90 %	
Activity class	: mixing and loading
Application rate	: <= 50 kg/min
contact rate	: Rare contact

Conditions and measures related to personal protection, hygiene and health evaluation	
The product is a skin sensitiser, sub-category 1B. Therefore, exposure should be minimised by appropriate risk management measures. For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.	
Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 98 %	
For further specification, refer to section 8 of the SDS.	

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Other conditions affecting workers exposure

Indoor or outdoor use	:	Indoor use
Ventilation rate	:	Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

1.2.10. Control of worker exposure: Material transfers; Dedicated facility (PROC8b)

Product (article) characteristics

Concentration of substance in product	:	Covers concentrations up to 100 %
Physical form of product	:	Solid, low dustiness

Amount used, frequency and duration of use (or from service life)

Duration	:	Covers exposure up to 45 min
Use frequency	:	5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Local exhaust ventilation
Inhalation - minimum efficiency of 95 %

Activity class	:	mixing and loading
Application rate	:	<= 50 kg/min
contact rate	:	Rare contact

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Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.
Dermal - minimum efficiency of 98 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

1.2.11. Control of worker exposure: Laboratory activities (PROC15)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 100 %

Physical form of product : Solid, low dustiness

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 4 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.

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For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Local exhaust ventilation
Inhalation - minimum efficiency of 90 %

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Dermal - minimum efficiency of 95 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

1.3. Exposure estimation and reference to its source

1.3.1. Environmental release and exposure: Formulation into mixture (ERC2)

Release route	Release	Release estimation method
Water	2 E-09 %	ATIEL-ATC SPERC 2.Ai-a.v1
Air	0,005 %	ATIEL-ATC SPERC 2.Ai-a.v1
Soil	0 %	ATIEL-ATC SPERC 2.Ai-a.v1

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Protection Target	Exposure estimate	Risk Characterisation Ratio (RCR)
Freshwater	0,00665 µg/L (EASY TRA v4.1)	0,033
Freshwater sediment	0,026 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Marine water	0,000687 µg/L (EASY TRA v4.1)	0,034
Marine sediment	0,00269 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Agricultural soil	0,00268 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Sewage treatment plant	0,0000023 µg/L (EASY TRA v4.1)	< 0,001
Man via environment - Oral	0,0000094 mg/kg bw/day (EASY TRA v4.1)	< 0,001

1.3.2. Environmental release and exposure: Formulation into mixture (ERC2)

Release route	Release	Release estimation method
Water	2 E-09 %	ATIEL-ATC SPERC 2.Ai-a.v1
Air	0,005 %	ATIEL-ATC SPERC 2.Ai-a.v1
Soil	0 %	ATIEL-ATC SPERC 2.Ai-a.v1

Protection Target	Exposure estimate	Risk Characterisation Ratio (RCR)
Freshwater	0,00666 µg/L (EASY TRA v4.1)	0,033
Freshwater sediment	0,026 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Marine water	0,000687 µg/L (EASY TRA v4.1)	0,034
Marine sediment	0,00269 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Agricultural soil	0,000829 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Sewage treatment plant	0,000001 µg/L (EASY TRA v4.1)	< 0,001
Man via environment - Oral	0,0000094 mg/kg bw/day (EASY TRA v4.1)	< 0,001

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1.3.4. Worker exposure: Use in closed process (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,091 mg/m ³ (EasyTRA)	0,508
dermal	systemic	long-term	0,002 mg/kg bw/day (EasyTRA)	0,034
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

1.3.5. Worker exposure: Continuous process; Batch process; Closed systems (PROC2, PROC3)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
PROC2, inhalation	systemic	long-term	0,010 mg/m ³ (EasyTRA)	0,054
PROC2, dermal	systemic	long-term	0,019 mg/kg bw/day (ECETOC TRA worker v3)	0,37
PROC3, inhalation	systemic	long-term	0,091 mg/m ³ (EasyTRA)	0,508
PROC3, dermal	systemic	long-term	0,009 mg/kg bw/day (ECETOC TRA worker v3)	0,185
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

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1.3.6. Worker exposure: Use in semi-closed process with opportunity for exposure; Small package filling; Small scale weighing (PROC4, PROC9)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,055 mg/m ³ (EasyTRA)	0,305
dermal	systemic	long-term	0,022 mg/kg bw/day (ECETOC TRA worker v3)	0,444
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

1.3.7. Worker exposure: Use in semi-closed process with opportunity for exposure; with sample collection (PROC4)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,091 mg/m ³ (EasyTRA)	0,508
dermal	systemic	long-term	0,009 mg/kg bw/day (ECETOC TRA worker v3)	0,185
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

1.3.8. Worker exposure: Mixing operations (PROC5)

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Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,033 mg/m ³ (EasyTRA)	0,183
dermal	systemic	long-term	0,016 mg/kg bw/day (ECETOC TRA worker v3)	0,329
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

1.3.9. Worker exposure: Material transfers; Non-dedicated facility (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,010 mg/m ³ (EasyTRA)	0,056
dermal	systemic	long-term	0,017 mg/kg bw/day (RISKOFLDERM v2.1)	0,336
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

1.3.10. Worker exposure: Material transfers; Dedicated facility (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
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Inhalation	systemic	long-term	0,001 mg/m ³ (EasyTRA)	0,006
dermal	systemic	long-term	0,017 mg/kg bw/day (RISKOFLDERM v2.1)	0,336
dermal	local	-	(Qualitative as- sessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

1.3.11. Worker exposure: Laboratory activities (PROC15)

Exposure route	Health effect	Exposure indica- tor	Exposure esti- mate	Risk Characteri- sation Ratio (RCR)
Inhalation	systemic	long-term	0,006 mg/m ³ (EasyTRA)	0,180
dermal	systemic	long-term	0,010 mg/kg bw/day (EasyTRA)	0,206
dermal	local	-	(Qualitative as- sessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

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

Guidance to Downstream Users

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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ES2: Use of lubricants and greases in vehicles or machinery, Industrial

2.1. Title section

Structured Short Title	: Use at industrial sites; ATIEL ATC B [i].
Substance	: N-phenyl-1-naphthylamine REACH No.: 01-2119488704-27 EC-No.: 201-983-0 CAS-No.: 90-30-2
Environmental release category(ies)	: ERC4 : Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
Process category(ies)	: PROC1 : Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 : Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC8b : Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC9 : Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Contributing Scenario (CS) Environment		
CS1	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)	ERC4

Contributing Scenario (CS) Worker		
CS2	General measures applicable to all activities	PROC0
CS3	Use in closed process; Continuous process	PROC1, PROC2
CS4	Material transfers; Dedicated facility	PROC8b
CS5	Small package filling; Small scale weighing	PROC9

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2.2. Conditions of use affecting exposure

2.2.1. Control of environmental exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

Amount used, frequency and duration of use (or from service life)	
Annual amount per site	: 30 t
Daily amount per site	: 100 kg
Emission days per year	: 300

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 disposal methods	: External treatment and disposal of waste should comply with applicable local and/or national 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

2.2.2. Control of worker exposure: General measures applicable to all activities (PROC0)

Technical and organisational conditions and measures
Containment in place Minimise number of staff exposed Ensure segregation of worker from the source. Provide extract ventilation to points where emissions occur. Good standard of general ventilation. Consider technical advances and process upgrades (including automation) for the elimination of re-leases. Avoid contact with contaminated tools and objects. Regular cleaning of equipment and work area. Only properly trained and authorized personnel should handle the substance.

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Substance-handling procedures shall be well documented and supervised.
Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable protective clothing.
Wear suitable gloves.
Wear suitable respiratory protection.
Use suitable eye protection.

For further specification, refer to section 8 of the SDS.

2.2.3. Control of worker exposure: Use in closed process; Continuous process (PROC1, PROC2)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 5 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 8 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

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Dermal - minimum efficiency of 95 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

2.2.4. Control of worker exposure: Material transfers; Dedicated facility (PROC8b)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 5 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 4 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

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The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.

Dermal - minimum efficiency of 98 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.

For further specification, refer to section 8 of the SDS.

2.2.5. Control of worker exposure: Small package filling; Small scale weighing (PROC9)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 5 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 8 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

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Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.
Dermal - minimum efficiency of 98 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

2.3. Exposure estimation and reference to its source

2.3.1. Environmental release and exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

Release route	Release	Release estimation method
Water	2 E-09 %	ATIEL-ATC SPERC 4.Bi.v1
Air	0,005 %	ATIEL-ATC SPERC 4.Bi.v1
Soil	0 %	ATIEL-ATC SPERC 4.Bi.v1

Protection Target	Exposure estimate	Risk Characterisation Ratio (RCR)
Freshwater	0,00665 µg/L (EASY TRA v4.1)	0,033

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Freshwater sediment	0,026 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Marine water	0,000687 µg/L (EASY TRA v4.1)	0,034
Marine sediment	0,00269 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Agricultural soil	0,0012 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Sewage treatment plant	0,0000001 µg/L (EASY TRA v4.1)	< 0,001
Man via environment - Oral	0,0000094 mg/kg bw/day (EASY TRA v4.1)	< 0,001

2.3.3. Worker exposure: Use in closed process; Continuous process (PROC1, PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
PROC1, inhalation	systemic	long-term	0,018 mg/m ³ (EasyTRA)	0,102
PROC1, dermal	systemic	long-term	< 0,001 mg/kg bw/day (EasyTRA)	0,007
PROC2, inhalation	systemic	long-term	0,097 mg/m ³ (EasyTRA)	0,541
PROC2, dermal	systemic	long-term	0,003 mg/kg bw/day (ECETOC TRA worker v3)	0,069
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitizer, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

2.3.4. Worker exposure: Material transfers; Dedicated facility (PROC8b)

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Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,110 mg/m ³ (EasyTRA)	0,609
dermal	systemic	long-term	0,008 mg/kg bw/day (ECETOC TRA worker v3)	0,165
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

2.3.5. Worker exposure: Small package filling; Small scale weighing (PROC9)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,097 mg/m ³ (EasyTRA)	0,541
dermal	systemic	long-term	0,007 mg/kg bw/day (ECETOC TRA worker v3)	0,137
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

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

Guidance to Downstream Users

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

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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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ES3: Use of lubricants and greases in vehicles or machinery, Professional

3.1. Title section

Structured Short Title	: Widespread use by professional workers; ATIEL ATC B [p].
Substance	: N-phenyl-1-naphthylamine REACH No.: 01-2119488704-27 EC-No.: 201-983-0 CAS-No.: 90-30-2

Environmental release category(ies)	: ERC9a: Widespread use of functional fluid (indoor) ERC9b: Widespread use of functional fluid (outdoor)
Process category(ies)	: PROC20: Use of functional fluids in small devices PROC8b: Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC8a: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Contributing Scenario (CS) Environment		
CS1	Widespread use of functional fluid (indoor); Widespread use of functional fluid (outdoor)	ERC9a, ERC9b

Contributing Scenario (CS) Worker		
CS2	Use in closed process; Continuous process	PROC1, PROC2
CS3	Material transfers; Use of functional fluids in small devices	PROC8a, PROC8b, PROC20

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3.2. Conditions of use affecting exposure

3.2.1. Control of environmental exposure: Widespread use of functional fluid (indoor); Widespread use of functional fluid (outdoor) (ERC9a, ERC9b)

Amount used, frequency and duration of use (or from service life)	
Annual amount for wide disperse uses	: 15 t
Daily amount per site	: 2,055 g
Emission days per year	: 365

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 disposal methods	: External treatment and disposal of waste should comply with applicable local and/or national 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

3.2.2. Control of worker exposure: Use in closed process; Continuous process (PROC1, PROC2)

Product (article) characteristics	
Concentration of substance in product	: < 1 %
Physical form of product	: Liquid

Amount used, frequency and duration of use (or from service life)	
Duration	: Covers exposure up to 8 h

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Use frequency	: 5 days per week
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Technical and organisational conditions and measures

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and supervised.

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 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use	: Covers indoor and outdoor use.
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Ventilation rate	: Provide a basic standard of general ventilation (1 to 3 air changes per hour).
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Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

3.2.3. Control of worker exposure: Material transfers; Use of functional fluids in small devices (PROC8a, PROC8b, PROC20)

Product (article) characteristics

Concentration of substance in product	: < 1 %
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Physical form of product	: Liquid
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Amount used, frequency and duration of use (or from service life)

Duration	: Covers exposure up to 4 h
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Use frequency	: 5 days per week
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Technical and organisational conditions and measures

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and supervised.

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 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Covers indoor and outdoor use.

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

3.3. Exposure estimation and reference to its source

3.3.1. Environmental release and exposure: Widespread use of functional fluid (indoor); Widespread use of functional fluid (outdoor) (ERC9a, ERC9b)

Release route	Release	Release estimation method
Water	0,05 %	ATIEL-ATC SPERC 9.Bp.v1
Air	0,01 %	ATIEL-ATC SPERC 9.Bp.v1
Soil	0,1 %	ATIEL-ATC SPERC 9.Bp.v1

Protection Target	Exposure estimate	Risk Characterisation Ratio (RCR)
Freshwater	0,00671 µg/L (EASY TRA v4.1)	0,034
Freshwater sediment	0,026 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Marine water	0,000692 µg/L (EASY TRA	0,035

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	v4.1)	
Marine sediment	0,00271 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Agricultural soil	0,0000888 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Sewage treatment plant	0,000513 µg/L (EASY TRA v4.1)	< 0,001
Man via environment - Oral	0,0000094 mg/kg bw/day (EASY TRA v4.1)	< 0,001

3.3.2. Worker exposure: Use in closed process; Continuous process (PROC1, PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
PROC1, inhalation	systemic	long-term	0,009 mg/m ³ (EasyTRA)	0,051
PROC1, dermal	systemic	long-term	< 0,001 mg/kg bw/day (EasyTRA)	0,007
PROC2, inhalation	systemic	long-term	0,091 mg/m ³ (EasyTRA)	0,508
PROC2, dermal	systemic	long-term	0,014 mg/kg bw/day (EasyTRA)	0,274

3.3.3. Worker exposure: Material transfers; Use of functional fluids in small devices (PROC8a, PROC8b, PROC20)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
PROC8a, inhalation	systemic	long-term	0,055 mg/m ³ (EasyTRA)	0,305
PROC8a, dermal	systemic	long-term	0,008 mg/kg bw/day (EasyTRA)	0,165
PROC8b, inhalation	systemic	long-term	0,055 mg/m ³ (EasyTRA)	0,305
PROC8b, dermal	systemic	long-term	0,008 mg/kg bw/day (EasyTRA)	0,165
PROC20, inhalation	systemic	long-term	0,055 mg/m ³ (EasyTRA)	0,305

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PROC20, dermal	systemic	long-term	0,017 mg/kg bw/day (EasyTRA)	0,343
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3.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to Downstream Users

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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ES4: Use of lubricants in open system, Industrial

4.1. Title section

Structured Short Title	: Use at industrial sites; ATIEL ATC C [i].
Substance	: N-phenyl-1-naphthylamine REACH No.: 01-2119488704-27 EC-No.: 201-983-0 CAS-No.: 90-30-2

Environmental release category(ies)	: ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
Process category(ies)	: PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC8b: Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring

Contributing Scenario (CS) Environment		
CS1	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)	ERC4

Contributing Scenario (CS) Worker		
CS2	General measures applicable to all activities	PROC0
CS3	Use in closed process; Continuous process	PROC1, PROC2
CS4	Material transfers; Dedicated facility	PROC8b
CS5	Small package filling; Small scale weighing	PROC9
CS6	Rolling, Brushing	PROC10
CS7	Dipping, immersion and pouring	PROC13

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4.2. Conditions of use affecting exposure

4.2.1. Control of environmental exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

Amount used, frequency and duration of use (or from service life)	
Annual amount per site	: 30 t
Daily amount per site	: 100 kg
Emission days per year	: 300

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 disposal methods	: External treatment and disposal of waste should comply with applicable local and/or national 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

4.2.2. Control of worker exposure: General measures applicable to all activities (PROC0)

Technical and organisational conditions and measures
Containment in place Minimise number of staff exposed Ensure segregation of worker from the source. Provide extract ventilation to points where emissions occur. Good standard of general ventilation. Consider technical advances and process upgrades (including automation) for the elimination of re-leases. Avoid contact with contaminated tools and objects. Regular cleaning of equipment and work area. Only properly trained and authorized personnel should handle the substance.

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Substance-handling procedures shall be well documented and supervised.
Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable protective clothing.
Wear suitable gloves.
Wear suitable respiratory protection.
Use suitable eye protection.

For further specification, refer to section 8 of the SDS.

4.2.3. Control of worker exposure: Use in closed process; Continuous process (PROC1, PROC2)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 5 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 8 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

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Dermal - minimum efficiency of 95 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

4.2.4. Control of worker exposure: Material transfers; Dedicated facility (PROC8b)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 5 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 4 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

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The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.

Dermal - minimum efficiency of 98 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.

For further specification, refer to section 8 of the SDS.

4.2.5. Control of worker exposure: Small package filling; Small scale weighing (PROC9)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 5 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 1 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

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Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitizer, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Dermal - minimum efficiency of 95 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

4.2.6. Control of worker exposure: Rolling, Brushing (PROC10)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 1 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 8 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

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The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Local exhaust ventilation
Inhalation - minimum efficiency of 90 %

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Dermal - minimum efficiency of 95 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

4.2.7. Control of worker exposure: Dipping, immersion and pouring (PROC13)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 5 %

Physical form of product : Liquid

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Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 8 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.
Dermal - minimum efficiency of 98 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

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4.3. Exposure estimation and reference to its source

4.3.1. Environmental release and exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

Release route	Release	Release estimation method
Water	2 E-09 %	ATIEL-ATC SPERC 4.Ci.v1
Air	0,005 %	ATIEL-ATC SPERC 4.Ci.v1
Soil	0 %	ATIEL-ATC SPERC 4.Ci.v1

Protection Target	Exposure estimate	Risk Characterisation Ratio (RCR)
Freshwater	0,00665 µg/L (EASY TRA v4.1)	0,033
Freshwater sediment	0,026 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Marine water	0,000687 µg/L (EASY TRA v4.1)	0,034
Marine sediment	0,00269 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Agricultural soil	0,0012 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Sewage treatment plant	0,000001 µg/L (EASY TRA v4.1)	< 0,001
Man via environment - Oral	0,0000094 mg/kg bw/day (EASY TRA v4.1)	< 0,001

4.3.3. Worker exposure: Use in closed process; Continuous process (PROC1, PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
PROC1, inhalation	systemic	long-term	0,018 mg/m ³ (EasyTRA)	0,102
PROC1, dermal	systemic	long-term	< 0,001 mg/kg bw/day (EasyTRA)	0,007
PROC2, inhalation	systemic	long-term	0,097 mg/m ³ (EasyTRA)	0,541
PROC2, dermal	systemic	long-term	0,003 mg/kg	0,069

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			bw/day (ECETOC TRA worker v3)	
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

4.3.4. Worker exposure: Material transfers; Dedicated facility (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,110 mg/m ³ (EasyTRA)	0,609
dermal	systemic	long-term	0,008 mg/kg bw/day (ECETOC TRA worker v3)	0,165
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

4.3.5. Worker exposure: Small package filling; Small scale weighing (PROC9)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,037 mg/m ³ (EasyTRA)	0,203
dermal	systemic	long-term	0,003 mg/kg bw/day (ECETOC TRA worker v3)	0,069
dermal	local	-	(Qualitative assessment)	

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Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

4.3.6. Worker exposure: Rolling, Brushing (PROC10)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,009 mg/m ³ (EasyTRA)	0,051
dermal	systemic	long-term	0,034 mg/kg bw/day (ECETOC TRA worker v3)	0,274
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

4.3.7. Worker exposure: Dipping, immersion and pouring (PROC13)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,097 mg/m ³ (EasyTRA)	0,541
dermal	systemic	long-term	0,014 mg/kg bw/day (ECETOC TRA worker v3)	0,274
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

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

Guidance to Downstream Users

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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ES5: Use of lubricants in open system, Professional

5.1. Title section

Structured Short Title	: Widespread use by professional workers; ATIEL ATC C [p].
Substance	: N-phenyl-1-naphthylamine REACH No.: 01-2119488704-27 EC-No.: 201-983-0 CAS-No.: 90-30-2
Environmental release category(ies)	: ERC8a : Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d : Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
Process category(ies)	: PROC13 : Treatment of articles by dipping and pouring PROC10 : Roller application or brushing PROC8a : Transfer of substance or mixture (charging/discharging) at non dedicated-facilities PROC2 : Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC1 : Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Contributing Scenario (CS) Environment		
CS1	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor); Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)	ERC8a, ERC8d

Contributing Scenario (CS) Worker		
CS2	Use in closed process; Continuous process	PROC1, PROC2
CS3	Material transfers; Non-dedicated facility	PROC8a
CS4	Rolling, Brushing	PROC10
CS5	Dipping, immersion and pouring	PROC13

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5.2. Conditions of use affecting exposure

5.2.1. Control of environmental exposure: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor); Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)

Amount used, frequency and duration of use (or from service life)	
Annual amount for wide disperse uses	: 6 t
Daily amount per site	: 822 mg
Emission days per year	: 365

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 disposal methods	: External treatment and disposal of waste should comply with applicable local and/or national 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

5.2.2. Control of worker exposure: Use in closed process; Continuous process (PROC1, PROC2)

Product (article) characteristics	
Concentration of substance in product	: < 1 %
Physical form of product	: Liquid

Amount used, frequency and duration of use (or from service life)	
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Duration	: Covers exposure up to 8 h
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Use frequency	: 5 days per week
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Technical and organisational conditions and measures

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and supervised.

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 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use	: Covers indoor and outdoor use.
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Ventilation rate	: Provide a basic standard of general ventilation (1 to 3 air changes per hour).
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Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

5.2.3. Control of worker exposure: Material transfers; Non-dedicated facility (PROC8a)

Product (article) characteristics

Concentration of substance in product	: < 1 %
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Physical form of product	: Liquid
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Amount used, frequency and duration of use (or from service life)

Duration	: Covers exposure up to 4 h
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Use frequency	: 5 days per week
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Technical and organisational conditions and measures

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and supervised.

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 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

5.2.4. Control of worker exposure: Rolling, Brushing (PROC10)

Product (article) characteristics

Concentration of substance in product : < 1 %

Physical form of product : Liquid
medium viscosity

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 8 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

Only trained and authorised personnel is allowed to handle the substance.

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Substance-handling procedures shall be well documented and supervised.

Activity : Dispersion with hand-held tools

Tool handle length : < 30 cm

Application rate : <= 0,2 L/min

Method of application : Ensure that direction of application is only horizontal or downward.

Activity class : Spreading of liquid products

Application rate : Spreading of liquids at surfaces or work pieces < 3 m²/h

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 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Covers indoor and outdoor use.

Temperature : Covers use at ambient temperatures.

Ventilation rate : Indoors with good natural ventilation.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

5.2.5. Control of worker exposure: Dipping, immersion and pouring (PROC13)

Product (article) characteristics

Concentration of substance in product : < 1 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 8 h

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Use frequency : 5 days per week

Technical and organisational conditions and measures

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and supervised.

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 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

5.3. Exposure estimation and reference to its source

5.3.1. Environmental release and exposure: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor); Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)

Release route	Release	Release estimation method
Water	0,05 %	ATIEL-ATC SPERC 8.Cp.v1
Air	0,01 %	ATIEL-ATC SPERC 8.Cp.v1
Soil	0,1 %	ATIEL-ATC SPERC 8.Cp.v1

Protection Target	Exposure estimate	Risk Characterisation Ratio (RCR)
Freshwater	0,00667 µg/L (EASY TRA v4.1)	0,033

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Freshwater sediment	0,026 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Marine water	0,000689 µg/L (EASY TRA v4.1)	0,034
Marine sediment	0,0027 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Agricultural soil	0,0000884 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Sewage treatment plant	0,000205 µg/L (EASY TRA v4.1)	< 0,001
Man via environment - Oral	0,0000094 mg/kg bw/day (EASY TRA v4.1)	< 0,001

5.3.2. Worker exposure: Use in closed process; Continuous process (PROC1, PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
PROC1, inhalation	systemic	long-term	0,009 mg/m ³ (EasyTRA)	0,051
PROC1, dermal	systemic	long-term	< 0,001 mg/kg bw/day (EasyTRA)	0,007
PROC2, inhalation	systemic	long-term	0,091 mg/m ³ (EasyTRA)	0,508
PROC2, dermal	systemic	long-term	0,014 mg/kg bw/day (EasyTRA)	0,274

5.3.3. Worker exposure: Material transfers; Non-dedicated facility (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,055 mg/m ³ (EasyTRA)	0,305
dermal	systemic	long-term	0,008 mg/kg bw/day (ECETOC TRA worker v3)	0,165
dermal	local	-	(Qualitative assessment)	

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5.3.4. Worker exposure: Rolling, Brushing (PROC10)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,01 mg/m ³ (ART v1.5)	0,054
dermal	systemic	long-term	0,038 mg/kg bw/day (RISKOFDERM v2.1)	0,76
dermal	local	-	(Qualitative assessment)	

5.3.5. Worker exposure: Dipping, immersion and pouring (PROC13)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,091 mg/m ³ (EasyTRA)	0,508
dermal	systemic	long-term	0,014 mg/kg bw/day (ECETOC TRA worker v3)	0,274
dermal	local	-	(Qualitative assessment)	

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

Guidance to Downstream Users

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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ES6: Use of lubricants in open high temperature processes, Industrial

6.1. Title section

Structured Short Title	: Use at industrial sites; ATIEL ATC D [i].
Substance	: N-phenyl-1-naphthylamine REACH No.: 01-2119488704-27 EC-No.: 201-983-0 CAS-No.: 90-30-2
Environmental release category(ies)	: ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
Process category(ies)	: PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC8b: Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC13: Treatment of articles by dipping and pouring

Contributing Scenario (CS) Environment		
CS1	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)	ERC4

Contributing Scenario (CS) Worker		
CS2	General measures applicable to all activities	PROC0
CS3	Use in closed process; Continuous process	PROC1, PROC2
CS4	Material transfers; Dedicated facility	PROC8b
CS5	Dipping, immersion and pouring	PROC13

6.2. Conditions of use affecting exposure

6.2.1. Control of environmental exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

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Amount used, frequency and duration of use (or from service life)

Annual amount for wide disperse uses : 6 t

Daily amount per site : 20 kg

Emission days per year : 300

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 disposal methods : External treatment and disposal of waste should comply with applicable local and/or national 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

6.2.2. Control of worker exposure: General measures applicable to all activities (PROC0)

Technical and organisational conditions and measures

Containment in place
Minimise number of staff exposed
Ensure segregation of worker from the source.
Provide extract ventilation to points where emissions occur.
Good standard of general ventilation.
Consider technical advances and process upgrades (including automation) for the elimination of re-leases.
Avoid contact with contaminated tools and objects.
Regular cleaning of equipment and work area.
Only properly trained and authorized personnel should handle the substance.
Substance-handling procedures shall be well documented and supervised.
Assumes a good basic standard of occupational hygiene is implemented

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Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable protective clothing.
Wear suitable gloves.
Wear suitable respiratory protection.
Use suitable eye protection.

For further specification, refer to section 8 of the SDS.

6.2.3. Control of worker exposure: Use in closed process; Continuous process (PROC1, PROC2)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 5 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 8 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Dermal - minimum efficiency of 95 %

For further specification, refer to section 8 of the SDS.

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Other conditions affecting workers exposure

Indoor or outdoor use	:	Indoor use
Ventilation rate	:	Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

6.2.4. Control of worker exposure: Material transfers; Dedicated facility (PROC8b)

Product (article) characteristics

Concentration of substance in product	:	Covers concentrations up to 5 %
Physical form of product	:	Liquid

Amount used, frequency and duration of use (or from service life)

Duration	:	Covers exposure up to 4 h
Use frequency	:	5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

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Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.

Dermal - minimum efficiency of 98 %

Wear suitable respiratory protection.

Inhalation - minimum efficiency of 98 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Temperature : Assumes process temperature up to 123 °C

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.

For further specification, refer to section 8 of the SDS.

6.2.5. Control of worker exposure: Dipping, immersion and pouring (PROC13)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 5 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 8 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.

Therefore, exposure should be minimised by appropriate risk management measures.

For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.

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Substance-handling procedures shall be well documented and strictly supervised.

Local exhaust ventilation
Inhalation - minimum efficiency of 90 %

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.
Dermal - minimum efficiency of 98 %

Wear suitable respiratory protection.
Inhalation - minimum efficiency of 98 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use	:	Indoor use
Temperature	:	Assumes process temperature up to 123 °C
Ventilation rate	:	Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

6.3. Exposure estimation and reference to its source

6.3.1. Environmental release and exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

Release route	Release	Release estimation method
Water	2 E-09 %	ATIEL-ATC SPERC 4.Ci.v1
Air	0,005 %	ATIEL-ATC SPERC 4.Ci.v1

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Soil	0 %	ATIEL-ATC SPERC 4.Ci.v1
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Protection Target	Exposure estimate	Risk Characterisation Ratio (RCR)
Freshwater	0,00665 µg/L (EASY TRA v4.1)	0,033
Freshwater sediment	0,026 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Marine water	0,000687 µg/L (EASY TRA v4.1)	0,034
Marine sediment	0,00269 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Agricultural soil	0,00031 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Sewage treatment plant	0,0000002 µg/L (EASY TRA v4.1)	< 0,001
Man via environment - Oral	0,0000094 mg/kg bw/day (EASY TRA v4.1)	< 0,001

6.3.3. Worker exposure: Use in closed process; Continuous process (PROC1, PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
PROC1, inhalation	systemic	long-term	0,018 mg/m ³ (EasyTRA)	0,102
PROC1, dermal	systemic	long-term	< 0,001 mg/kg bw/day (EasyTRA)	0,007
PROC2, inhalation	systemic	long-term	0,097 mg/m ³ (EasyTRA)	0,541
PROC2, dermal	systemic	long-term	0,003 mg/kg bw/day (ECETOC TRA worker v3)	0,069
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

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6.3.4. Worker exposure: Material transfers; Dedicated facility (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,11 mg/m ³ (EasyTRA)	0,609
dermal	systemic	long-term	0,008 mg/kg bw/day (ECETOC TRA worker v3)	0,165
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

6.3.5. Worker exposure: Dipping, immersion and pouring (PROC13)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,037 mg/m ³ (EasyTRA)	0,203
dermal	systemic	long-term	0,014 mg/kg bw/day (ECETOC TRA worker v3)	0,274
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

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

Guidance to Downstream Users

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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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ES7: Handling and dilution of metalworking fluid concentrates, Industrial

7.1. Title section

Structured Short Title	: Formulation or re-packing; ATIEL ATC E [i].
Substance	: N-phenyl-1-naphthylamine REACH No.: 01-2119488704-27 EC-No.: 201-983-0 CAS-No.: 90-30-2
Environmental release category(ies)	: ERC2: Formulation into mixture
Process category(ies)	: PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC5: Mixing or blending in batch processes PROC8b: Transfer of substance or mixture (charging/discharging) at dedicated facilities

Contributing Scenario (CS) Environment		
CS1	Formulation into mixture	ERC2
Contributing Scenario (CS) Worker		
CS2	General measures applicable to all activities	PROC0
CS3	Use in closed process; Continuous process	PROC1, PROC2
CS4	Mixing operations; Material transfers; Dedicated facility	PROC5, PROC8b

7.2. Conditions of use affecting exposure

7.2.1. Control of environmental exposure: Formulation into mixture (ERC2)

Amount used, frequency and duration of use (or from service life)
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Annual amount per site	:	5 t
Daily amount per site	:	250 kg
Emission days per year	:	20

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 disposal methods	:	External treatment and disposal of waste should comply with applicable local and/or national regulations.
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Other conditions affecting environmental exposure

Receiving surface water flow	:	18.000 m3/d
Local freshwater dilution factor	:	10
Local marine water dilution factor	:	100

7.2.2. Control of worker exposure: General measures applicable to all activities (PROC0)

Technical and organisational conditions and measures

Containment in place
Minimise number of staff exposed
Ensure segregation of worker from the source.
Provide extract ventilation to points where emissions occur.
Good standard of general ventilation.
Consider technical advances and process upgrades (including automation) for the elimination of re-leases.
Avoid contact with contaminated tools and objects.
Regular cleaning of equipment and work area.
Only properly trained and authorized personnel should handle the substance.
Substance-handling procedures shall be well documented and supervised.
Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable protective clothing.
Wear suitable gloves.

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Wear suitable respiratory protection.

Use suitable eye protection.

For further specification, refer to section 8 of the SDS.

7.2.3. Control of worker exposure: Use in closed process; Continuous process (PROC1, PROC2)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 5 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 8 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Dermal - minimum efficiency of 95 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

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Ventilation rate	:	Provide a basic standard of general ventilation (1 to 3 air changes per hour).
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Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

7.2.4. Control of worker exposure: Mixing operations; Material transfers; Dedicated facility (PROC5, PROC8b)

Product (article) characteristics

Concentration of substance in product	:	Covers concentrations up to 5 %
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Physical form of product	:	Liquid
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Amount used, frequency and duration of use (or from service life)

Duration	:	Covers exposure up to 1 h
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Use frequency	:	5 days per week
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Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Dermal - minimum efficiency of 95 %

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For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use
Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

7.3. Exposure estimation and reference to its source

7.3.1. Environmental release and exposure: Formulation into mixture (ERC2)

Release route	Release	Release estimation method
Water	2 E-09 %	ATIEL-ATC SPERC 2.Ei.v1
Air	0,005 %	ATIEL-ATC SPERC 2.Ei.v1
Soil	0 %	ATIEL-ATC SPERC 2.Ei.v1

Protection Target	Exposure estimate	Risk Characterisation Ratio (RCR)
Freshwater	0,00665 µg/L (EASY TRA v4.1)	0,033
Freshwater sediment	0,026 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Marine water	0,000687 µg/L (EASY TRA v4.1)	0,034
Marine sediment	0,00269 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Agricultural soil	0,000273 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Sewage treatment plant	0,0000025 µg/L (EASY TRA v4.1)	< 0,001
Man via environment - Oral	0,0000094 mg/kg bw/day (EASY TRA v4.1)	< 0,001

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7.3.3. Worker exposure: Use in closed process; Continuous process (PROC1, PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
PROC1, inhalation	systemic	long-term	0,018 mg/m ³ (EasyTRA)	0,102
PROC1, dermal	systemic	long-term	< 0,001 mg/kg bw/day (EasyTRA)	0,007
PROC2, inhalation	systemic	long-term	0,097 mg/m ³ (EasyTRA)	0,541
PROC2, dermal	systemic	long-term	0,003 mg/kg bw/day (ECETOC TRA worker v3)	0,069
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

7.3.4. Worker exposure: Mixing operations; Material transfers; Dedicated facility (PROC5, PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,037 mg/m ³ (EasyTRA)	0,203
dermal	systemic	long-term	0,007 mg/kg bw/day (ECETOC TRA worker v3)	0,137
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

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

Guidance to Downstream Users

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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ES8: Use of lubricants in high energy open processes, Industrial

8.1. Title section

Structured Short Title	: Use at industrial sites; ATIEL ATC F [i].
Substance	: N-phenyl-1-naphthylamine REACH No.: 01-2119488704-27 EC-No.: 201-983-0 CAS-No.: 90-30-2

Environmental release category(ies)	: ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
Process category(ies)	: PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC8b: Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC17: Lubrication at high energy conditions in metal working operations PROC18: General greasing/lubrication at high kinetic energy conditions

Contributing Scenario (CS) Environment		
CS1	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)	ERC4

Contributing Scenario (CS) Worker		
CS2	General measures applicable to all activities	PROC0
CS3	Use in closed process	PROC1
CS4	Continuous process; Closed systems	PROC2
CS5	Material transfers; Dedicated facility	PROC8b
CS6	Lubrication at high energy conditions in metal working operations; General greasing/lubrication at high kinetic energy conditions	PROC17, PROC18

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8.2. Conditions of use affecting exposure

8.2.1. Control of environmental exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

Amount used, frequency and duration of use (or from service life)	
Annual amount per site	: 5 t
Daily amount per site	: 16,667 kg
Emission days per year	: 300

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 disposal methods	: External treatment and disposal of waste should comply with applicable local and/or national 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

8.2.2. Control of worker exposure: General measures applicable to all activities (PROC0)

Technical and organisational conditions and measures
Containment in place Minimise number of staff exposed Ensure segregation of worker from the source. Provide extract ventilation to points where emissions occur. Good standard of general ventilation. Consider technical advances and process upgrades (including automation) for the elimination of re-leases. Avoid contact with contaminated tools and objects. Regular cleaning of equipment and work area. Only properly trained and authorized personnel should handle the substance.

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Substance-handling procedures shall be well documented and supervised.
Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable protective clothing.
Wear suitable gloves.
Wear suitable respiratory protection.
Use suitable eye protection.

For further specification, refer to section 8 of the SDS.

8.2.3. Control of worker exposure: Use in closed process (PROC1)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 5 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 8 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

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Dermal - minimum efficiency of 95 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

8.2.4. Control of worker exposure: Continuous process; Closed systems (PROC2)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 5 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 8 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Local exhaust ventilation
Inhalation - minimum efficiency of 90 %

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Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Dermal - minimum efficiency of 95 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

8.2.5. Control of worker exposure: Material transfers; Dedicated facility (PROC8b)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 5 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 4 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to

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be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.
Dermal - minimum efficiency of 98 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use	:	Indoor use
Ventilation rate	:	Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

8.2.6. Control of worker exposure: Lubrication at high energy conditions in metal working operations; General greasing/lubrication at high kinetic energy conditions (PROC17, PROC18)

Product (article) characteristics

Concentration of substance in product	:	Covers concentrations up to 5 %
Physical form of product	:	Liquid medium viscosity

Amount used, frequency and duration of use (or from service life)

Duration	:	Covers exposure up to 8 h
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Use frequency	: 5 days per week
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Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and supervised.

Local exhaust ventilation
Inhalation - minimum efficiency of 90 %

Primary emission source not located in the breathing zone of the worker (Far field source)
Demonstrable and effective housekeeping practices are in place.

Activity class : Mechanical treatment of solid objects

contact rate : Rare contact

Worker distance : More than arm's length

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Dermal - minimum efficiency of 95 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Temperature : Assumes activities are above room temperature.

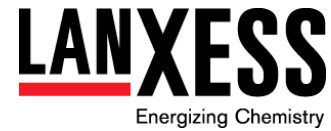
Ventilation rate : Indoors with good natural ventilation.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

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8.3. Exposure estimation and reference to its source

8.3.1. Environmental release and exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

Release route	Release	Release estimation method
Water	2 E-09 %	ATIEL-ATC SPERC 4.Fi.v1
Air	0,005 %	ATIEL-ATC SPERC 4.Fi.v1
Soil	0 %	ATIEL-ATC SPERC 4.Fi.v1

Protection Target	Exposure estimate	Risk Characterisation Ratio (RCR)
Freshwater	0,00665 µg/L (EASY TRA v4.1)	0,033
Freshwater sediment	0,026 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Marine water	0,000687 µg/L (EASY TRA v4.1)	0,034
Marine sediment	0,00269 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Agricultural soil	0,000273 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Sewage treatment plant	0,0000002 µg/L (EASY TRA v4.1)	< 0,001
Man via environment - Oral	0,0000094 mg/kg bw/day (EASY TRA v4.1)	< 0,001

8.3.3. Worker exposure: Use in closed process (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,018 mg/m ³ (EasyTRA)	0,102
dermal	systemic	long-term	< 0,001 mg/kg bw/day (ECETOC TRA worker v3)	0,007
dermal	local	-	(Qualitative as-	

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Additional information on exposure estimation

The product is a skin sensitizer, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

8.3.4. Worker exposure: Continuous process; Closed systems (PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,097 mg/m ³ (EasyTRA)	0,541
dermal	systemic	long-term	0,003 mg/kg bw/day (ECETOC TRA worker v3)	0,069
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitizer, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

8.3.5. Worker exposure: Material transfers; Dedicated facility (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,110 mg/m ³ (EasyTRA)	0,609
dermal	systemic	long-term	0,008 mg/kg bw/day (ECETOC TRA worker v3)	0,165
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

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The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

8.3.6. Worker exposure: Lubrication at high energy conditions in metal working operations; General greasing/lubrication at high kinetic energy conditions (PROC17, PROC18)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,086 mg/m ³ (ART v1.5)	0,478
dermal	systemic	long-term	0,003 mg/kg bw/day (RISKOFDERM v2.1)	0,06
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

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

Guidance to Downstream Users

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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ES9: Use of lubricants in high energy open processes, Professional

9.1. Title section

Structured Short Title	: Widespread use by professional workers; ATIEL ATC F [p].
Substance	: N-phenyl-1-naphthylamine REACH No.: 01-2119488704-27 EC-No.: 201-983-0 CAS-No.: 90-30-2

Environmental release category(ies)	: ERC8a : Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
Process category(ies)	: PROC18 : General greasing/lubrication at high kinetic energy conditions PROC17 : Lubrication at high energy conditions in metal working operations PROC8a : Transfer of substance or mixture (charging/discharging) at non dedicated-facilities PROC2 : Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC1 : Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Contributing Scenario (CS) Environment		
CS1	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)	ERC8a

Contributing Scenario (CS) Worker		
CS2	General measures applicable to all activities	PROC0
CS3	Use in closed process; Continuous process	PROC1, PROC2
CS4	Material transfers; Non-dedicated facility	PROC8a
CS5	Lubrication at high energy conditions in metal working operations; General greasing/lubrication at high kinetic energy conditions	PROC17, PROC18

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9.2. Conditions of use affecting exposure

9.2.1. Control of environmental exposure: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a)

Amount used, frequency and duration of use (or from service life)	
Annual amount for wide disperse uses	: 5 t
Daily amount per site	: 685 mg
Emission days per year	: 365

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 disposal methods	: External treatment and disposal of waste should comply with applicable local and/or national 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

9.2.2. Control of worker exposure: General measures applicable to all activities (PROC0)

Technical and organisational conditions and measures
Containment in place Minimise number of staff exposed Ensure segregation of worker from the source. Provide extract ventilation to points where emissions occur. Good standard of general ventilation. Consider technical advances and process upgrades (including automation) for the elimination of re-leases. Avoid contact with contaminated tools and objects. Regular cleaning of equipment and work area.

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Only properly trained and authorized personnel should handle the substance.
Substance-handling procedures shall be well documented and supervised.
Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable protective clothing.
Wear suitable gloves.
Wear suitable respiratory protection.
Use suitable eye protection.

For further specification, refer to section 8 of the SDS.

9.2.3. Control of worker exposure: Use in closed process; Continuous process (PROC1, PROC2)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 5 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 8 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and strictly supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

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Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Dermal - minimum efficiency of 95 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

9.2.4. Control of worker exposure: Material transfers; Non-dedicated facility (PROC8a)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 5 %

Physical form of product : Liquid

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 4 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitizer, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and supervised.

Conditions and measures related to personal protection, hygiene and health evaluation

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The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Dermal - minimum efficiency of 95 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Ventilation rate : Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

9.2.5. Control of worker exposure: Lubrication at high energy conditions in metal working operations; General greasing/lubrication at high kinetic energy conditions (PROC17, PROC18)

Product (article) characteristics

Concentration of substance in product : Covers concentrations up to 5 %

Physical form of product : Liquid
medium viscosity

Amount used, frequency and duration of use (or from service life)

Duration : Covers exposure up to 8 h

Use frequency : 5 days per week

Technical and organisational conditions and measures

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to

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all activities' section in this exposure scenario.

Only trained and authorised personnel is allowed to handle the substance.
Substance-handling procedures shall be well documented and supervised.

Local exhaust ventilation
Inhalation - minimum efficiency of 90 %

Primary emission source not located in the breathing zone of the worker (Far field source)
Demonstrable and effective housekeeping practices are in place.

Activity class : Mechanical treatment of solid objects

contact rate : Rare contact

Worker distance : More than arm's length

Conditions and measures related to personal protection, hygiene and health evaluation

The product is a skin sensitiser, sub-category 1B.
Therefore, exposure should be minimised by appropriate risk management measures.
For general risk management measures, operational conditions and personal protective equipment to be considered when handling the substance or mixture, refer to the 'General measures applicable to all activities' section in this exposure scenario.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Dermal - minimum efficiency of 95 %

For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

Temperature : Assumes activities are above room temperature.

Ventilation rate : Indoors with good natural ventilation.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

On possible contact with the product (sampling, spillage, leakage, cleaning): Wear protective clothing, wear protective gloves, wear eye protection and respiratory protection.
For further specification, refer to section 8 of the SDS.

9.3. Exposure estimation and reference to its source

9.3.1. Environmental release and exposure: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a)

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Release route	Release	Release estimation method
Water	0,1 %	ATIEL-ATC SPERC 8.Fp.v1
Air	0,01 %	ATIEL-ATC SPERC 8.Fp.v1
Soil	0,1 %	ATIEL-ATC SPERC 8.Fp.v1

Protection Target	Exposure estimate	Risk Characterisation Ratio (RCR)
Freshwater	0,00669 µg/L (EASY TRA v4.1)	0,033
Freshwater sediment	0,026 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Marine water	0,000690 µg/L (EASY TRA v4.1)	0,035
Marine sediment	0,00269 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Agricultural soil	0,0000886 µg/kg dry weight (EASY TRA v4.1)	< 0,001
Sewage treatment plant	0,000342 µg/L (EASY TRA v4.1)	< 0,001
Man via environment - Oral	0,0000094 mg/kg bw/day (EASY TRA v4.1)	< 0,001

9.3.3. Worker exposure: Use in closed process; Continuous process (PROC1, PROC2)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
PROC1, inhalation	systemic	long-term	0,018 mg/m ³ (EasyTRA)	0,102
PROC1, dermal	systemic	long-term	< 0,001 mg/kg bw/day (EasyTRA)	0,007
PROC2, inhalation	systemic	long-term	0,097 mg/m ³ (EasyTRA)	0,541
PROC2, dermal	systemic	long-term	0,003 mg/kg bw/day (ECETOC TRA worker v3)	0,069
dermal	local	-	(Qualitative assessment)	

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Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

9.3.4. Worker exposure: Material transfers; Non-dedicated facility (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,058 mg/m ³ (EasyTRA)	0,325
dermal	systemic	long-term	0,021 mg/kg bw/day (ECETOC TRA worker v3)	0,411
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.
Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

9.3.5. Worker exposure: Lubrication at high energy conditions in metal working operations; General greasing/lubrication at high kinetic energy conditions (PROC17, PROC18)

Exposure route	Health effect	Exposure indicator	Exposure estimate	Risk Characterisation Ratio (RCR)
Inhalation	systemic	long-term	0,086 mg/m ³ (ART v1.5)	0,478
dermal	systemic	long-term	0,003 mg/kg bw/day (RISKOFDERM v2.1)	0,06
dermal	local	-	(Qualitative assessment)	

Additional information on exposure estimation

The product is a skin sensitiser, sub-category 1B.

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Available hazard data do not enable the derivation of a DNEL for sensitisation effects.

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

Guidance to Downstream Users

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.