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

1.1 Product identifier

Trade name: CAPRINO GUANAMINE
Registration number: 01-2120768106-53-0000
CAS-No.: 5921-65-3
EC-No.: 227-645-2

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

Use of the Substance/Mixture: Stabilizer

1.3 Details of the supplier of the safety data sheet

Company: AlzChem Trostberg GmbH
Dr.-Albert-Frank-Str. 32
83308 Trostberg, Germany
Telephone: +49 8621 86-3351
E-mail address of person responsible for the SDS: alz-psl@alzchem.com

1.4 Emergency telephone number

Emergency telephone number: +49 8621 86-2776
AlzChem Trostberg GmbH, Fire Brigade

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)
Acute aquatic toxicity, Category 1: H400: Very toxic to aquatic life.
Chronic aquatic toxicity, Category 1: H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)
Hazard pictograms: [image]
Signal word: Warning
Hazard statements: H410 Very toxic to aquatic life with long lasting effects.
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

CAPRINO GUANAMINE

Precautionary statements:

Prevention:
P273 Avoid release to the environment.

Response:
P391 Collect spillage.

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

2.3 Other hazards
A PBT/vPvB evaluation is not available, since a chemical safety evaluation is not required / has not been carried out.
If dust occurs:
Mechanical irritation of skin and mucous linings of eyes and respiratory tract may occur.
Dust can form an explosive mixture in air.

SECTION 3: Composition/information on ingredients

3.1 Substances
Substance name: 6-Nonyl-1,3,5-triazine-2,4-diamine

Hazardous components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-nonyl-1,3,5-triazine-2,4-diamine</td>
<td>5921-65-3</td>
<td>227-645-2</td>
<td>96 - 97</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1 Description of first aid measures
General advice: Seek medical advice in case of symptoms caused by eye or skin contact, inhalation or swallowing.

If inhaled: Move to fresh air.

In case of skin contact: Wash off with plenty of water and soap.

In case of eye contact: Rinse thoroughly with plenty of water, also under the eyelids.

If swallowed: Clean mouth with water and drink afterwards plenty of water.

4.2 Most important symptoms and effects, both acute and delayed
None known.
4.3 Indication of any immediate medical attention and special treatment needed

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media : Water spray, foam, CO2, dry powder.
Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture
Hazardous combustion products :
- Ammonia
- Carbon oxides
- Nitrous gases
- Hydrocyanic acid (HCN)

5.3 Advice for firefighters
Special protective equipment for firefighters : In the case of fire, wear respiratory protective equipment independent of surrounding air and chemical protective suit.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Personal precautions : Wear personal protective equipment; see section 8. Avoid formation of dust. Ensure sufficient ventilation.

6.2 Environmental precautions
Environmental precautions : Product or extinguishing water with product must not be allowed to enter soil, sewers or natural bodies of water.

6.3 Methods and material for containment and cleaning up
Methods for cleaning up : Sweep up and shovel. Avoid dust formation. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Advice on safe handling : Handle in accordance with good industrial hygiene and safety practice. Provide sufficient ventilation and exhaust at the workplace. Do not allow accumulation of dust.
Advice on protection against fire and explosion : Formation of flammable or explosive dust/air mixtures possible. Keep away from combustion sources such as sparks, flames and unprotected light sources. Take measures to pre-
vent the build up of electrostatic charge.

Hygiene measures: Do not breathe dust. Avoid contact with skin, eyes and clothing. Take off clothing and shoes contaminated with product. Clean before reuse. Do not eat, drink or smoke while working. Wash hands, and/or face before breaks and when workday is finished. Keep away from food, drink and animal feedingstuffs.

Dust explosion class: St2

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Store in the original receptacle, keeping this tightly sealed, under cool and dry conditions.

Packaging material: Suitable material: polyethylene, Polypropylene

7.3 Specific end use(s)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-Nonyl-1,3,5-triazine-2,4-diamine</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>2.63 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>0.75 mg/kg</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-Nonyl-1,3,5-triazine-2,4-diamine</td>
<td>Fresh water</td>
<td>0.000031 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.000003 mg/l</td>
</tr>
<tr>
<td></td>
<td>water - intermittent releases</td>
<td>0.00031 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>0.0129 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.00129 mg/kg</td>
</tr>
<tr>
<td></td>
<td>soil</td>
<td>2.55 mg/kg</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Personal protective equipment

Eye protection: Safety glasses

Hand protection

Material: Nitrile rubber, Recommendation: Camatril 730

Break through time: > 480 min

Glove thickness: 0.4 mm

Directive: DIN EN 374

Manufacturer: Kächele-Cama Latex GmbH (KCL), Germany

Material: Chloroprene, Recommendation: Camapren 722
SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- **Appearance**: solid
- **Colour**: yellowish
- **Odour**: odourless
- **Melting point/range**: 115 - 125 °C
- **Flash point**: Not applicable
- **Flammability (solid, gas)**: BZ 2 - briefly ignites and rapidly extinguishes.
- **Burning number**: Method: Combustibility test in accordance with VDI 2263 BZ 2 - briefly ignites and rapidly extinguishes.
- **Bulk density**: 370 kg/m³
- **Solubility(ies)**
  - Water solubility: insoluble
  - Solubility in other solvents: 42.1 g/l (20 °C) Solvent: Ethanol
- **Partition coefficient: n-octanol/water**: log Pow: 3.83 (20 °C) Method: OECD 117
- **Auto-ignition temperature**: 460 - 640 °C Method: Ignition temperature for swirling (airborne) dust
  - > 350 °C Method: Flammability of deposited dust No burning at 360°C.

9.2 Other information

- **Impact sensitivity**: not sensitive to impact
- **Not sensitive to rubbing**
SECTION 10: Stability and reactivity

10.1 Reactivity
See section 10.3

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions: No hazardous reactions are known if properly handled and stored.

10.4 Conditions to avoid
Conditions to avoid: None known

10.5 Incompatible materials
Materials to avoid: Strong oxidizing agents

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Components:

6-nonyl-1,3,5-triazine-2,4-diamine:

Acute oral toxicity: LD50 (Rat): > 10000 mg/kg
Assessment: Based on available data, the classification criteria are not met.
Remarks: Own test result.

Acute inhalation toxicity: Remarks: No data available

Acute dermal toxicity: LD50 (Rabbit): > 2800 mg/kg
Assessment: Based on available data, the classification criteria are not met.
Remarks: Own test result.

Skin corrosion/irritation

Components:

6-nonyl-1,3,5-triazine-2,4-diamine:
### CAPRINO GUANAMINE

<table>
<thead>
<tr>
<th>Species</th>
<th>Rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Result</td>
<td>Mild skin irritation</td>
</tr>
<tr>
<td>Remarks</td>
<td>Own test result.</td>
</tr>
</tbody>
</table>

**Serious eye damage/eye irritation**

**Components:**

**6-nonyl-1,3,5-triazine-2,4-diamine:**

<table>
<thead>
<tr>
<th>Species</th>
<th>Rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Result</td>
<td>Mild eye irritation</td>
</tr>
<tr>
<td>Remarks</td>
<td>Own test result.</td>
</tr>
</tbody>
</table>

**Respiratory or skin sensitisation**

**Components:**

**6-nonyl-1,3,5-triazine-2,4-diamine:**

| Remarks | no data available |

**Germ cell mutagenicity**

**Components:**

**6-nonyl-1,3,5-triazine-2,4-diamine:**

| Germ cell mutagenicity - Assessment | Not mutagenic in Ames Test, Own study, IUCLID |

**Carcinogenicity**

**Components:**

**6-nonyl-1,3,5-triazine-2,4-diamine:**

| Carcinogenicity - Assessment | no data available |

**Reproductive toxicity**

**Components:**

**6-nonyl-1,3,5-triazine-2,4-diamine:**

| Reproductive toxicity - Assessment | No indications of effects of reproductive / developmental toxicity. |

**STOT - single exposure**

**Components:**

**6-nonyl-1,3,5-triazine-2,4-diamine:**

| Remarks | no data available |
STOT - repeated exposure

Components:

6-nonyl-1,3,5-triazine-2,4-diamine:
Remarks: no data available

Aspiration toxicity

Components:

6-nonyl-1,3,5-triazine-2,4-diamine:
No data available

Further information

Product:
Remarks: No additional toxicological data are available.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Ecotoxicology Assessment
Acute aquatic toxicity: Very toxic to aquatic life.
Chronic aquatic toxicity: Very toxic to aquatic life with long lasting effects.

Components:

6-nonyl-1,3,5-triazine-2,4-diamine:
Toxicity to fish: LC50 (Oncorhynchus mykiss): 0,768 mg/l
Exposure time: 96 h
Method: OECD TG 203

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 2,18 mg/l
Exposure time: 48 h
Method: OECD TG 202

Toxicity to algae: EC50 (calculated): 0,031 mg/l
Test Type: Growth inhibition
Method: QSAR-Method

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential

Components:

6-nonyl-1,3,5-triazine-2,4-diamine:
### Bioaccumulation

**Remarks:** No bioaccumulation is to be expected (log Pow $\leq$ 4).

### 12.4 Mobility in soil

**no data available**

### 12.5 Results of PBT and vPvB assessment

**Product:**

**Assessment:** A PBT/vPvB evaluation is not available, since a chemical safety evaluation is not required / has not been carried out.

### 12.6 Other adverse effects

**Product:**

**Additional ecological information:** Prevent uncontrolled release in the environment. No further ecotoxicological data are available.

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

**Product:** Must be brought to an adequate waste treatment facility, in conformity with applicable waste disposal regulations.

**Contaminated packaging:** Packaging, that can not be reused after cleaning must be disposed or recycled in accordance with all federal, national and local regulations.

### SECTION 14: Transport information

#### 14.1 UN number

**ADR:** UN 3077  
**RID:** UN 3077  
**IMDG:** UN 3077  
**IATA:** UN 3077

#### 14.2 UN proper shipping name

**ADR:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Caprinoguanamine)

**RID:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Caprinoguanamine)

**IMDG:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Caprinoguanamine)

**IATA:** Environmentally hazardous substance, solid, n.o.s.
(Caprinoguanamine)

14.3 Transport hazard class(es)

ADR : 9
RID : 9
IMDG : 9
IATA : 9

14.4 Packing group

Remarks : Not dangerous goods in packaging up to 5 kg.

ADR
Packing group : III
Classification Code : M7
Hazard Identification Number : 90
Labels : 9
Remarks : Not dangerous goods in packaging up to 5 kg.

RID
Packing group : III
Classification Code : M7
Hazard Identification Number : 90
Labels : 9
Remarks : Not dangerous goods in packaging up to 5 kg.

IMDG
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Remarks : Not dangerous goods in packaging up to 5 kg.

IATA (Cargo)
Packing instruction (cargo aircraft) : 956
Packing instruction (LQ) : Y956
Packing group : III
Labels : Miscellaneous Dangerous Goods
Remarks : ERG-Code 9L
Not dangerous goods in packaging up to 5 kg.

IATA (Passenger)
Packing instruction (passenger aircraft) : 956
Packing instruction (LQ) : Y956
Packing group : III
Labels : Miscellaneous Dangerous Goods
Remarks : ERG-Code 9L
Not dangerous goods in packaging up to 5 kg.

14.5 Environmental hazards

ADR
Environmentally hazardous : yes

RID
Environmentally hazardous : yes

IMDG
Marine pollutant : yes

IATA (Passenger)
Environmentally hazardous : yes

IATA (Cargo)
Environmentally hazardous : yes

14.6 Special precautions for user
Remarks : Not dangerous goods in packaging up to 5 kg.

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable for product as supplied.

SECTION 15: Regulatory information

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

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

- EINECS : Listed
- IECSC : Listed
- TCSI : Listed

15.2 Chemical safety assessment

A substance safety assessment was carried out for this product.

SECTION 16: Other information

Full text of other abbreviations

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

Further information

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

REG_EU / EN
Annex

Exposure Scenario

<table>
<thead>
<tr>
<th>Number</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES1</td>
<td>Worker (industrial) - Use as a processing aid during treatment of articles</td>
</tr>
<tr>
<td>ES2</td>
<td>Worker (industrial) - Use as stabilizer in formaldehyde solutions</td>
</tr>
</tbody>
</table>
ES1: Worker (industrial) - Use as a processing aid during treatment of articles

1.1. Title section

Structured Short Title : Worker (industrial) - Use as a processing aid during treatment of articles

Environment

CS1 Worker (industrial) - Use as a processing aid during treatment of articles ERC4

Worker

CS2 Worker (industrial) - Use as a processing aid during treatment of articles PROC3

CS3 Worker (industrial) - Use as a processing aid during treatment of articles PROC8b

1.2. Conditions of use affecting exposure

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

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

| Daily amount per site | 200 kg |
| Annual amount per site | 20000 kg |
| Release type | Continuous release |
| Emission days | 100 |

Technical and organisational conditions and measures

Central biological waste water treatment
Water - minimum efficiency of 33 %

Conditions and measures related to sewage treatment plant

STP type : Onsite STP
Efficiency of sewage treatment plant : 33 %

Conditions and measures related to treatment of waste (including article waste)

Waste treatment : See Section 13 of the Safety Data Sheet.

Other conditions affecting environmental exposure

Receiving surface water flow : 18000 m³/d
<table>
<thead>
<tr>
<th>Indoor or outdoor use</th>
<th>Indoor use</th>
</tr>
</thead>
</table>

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

**Product (article) characteristics**

- Covers concentrations up to 100 %
- Physical form of product: Solid, low dustiness

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

- Duration: duration of activity < 8 h

**Technical and organisational conditions and measures**

- Local exhaust ventilation
- Inhalation - minimum efficiency of 90 %

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

- Wear suitable gloves tested to EN374.
- Dermal - minimum efficiency of 80 %

**Other conditions affecting workers exposure**

- Body parts exposed: <= 240 cm²
- Indoor or outdoor use: Indoor use.
- Professional or industrial settings: Industrial use
- Temperature: Covers use at ambient temperatures.
- Ventilation rate per hour: 3

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

**Occupational Health and Safety Management System: Advanced**

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

**Product (article) characteristics**

- Covers concentrations up to 100 %
- Physical form of product: Liquid mixture

**Amount used, frequency and duration of use (or from service life)**
Duration: duration of activity < 8 h

Technical and organisational conditions and measures

Local exhaust ventilation
Inhalation - minimum efficiency of 95%

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

Wear suitable gloves tested to EN374.
Dermal - minimum efficiency of 95%

Other conditions affecting workers exposure

Body parts exposed: <= 240 cm²
Indoor or outdoor use: Indoor use.
Professional or industrial settings: Industrial use
Temperature: Covers use at ambient temperatures.
Ventilation rate per hour: 3

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

Occupational Health and Safety Management System: Advanced

1.3. Exposure estimation and reference to its source

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

<table>
<thead>
<tr>
<th>Compartment</th>
<th>Exposure level</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewage treatment plant.</td>
<td>0 mg/L (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>Freshwater</td>
<td>0 mg/L (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>Marine water</td>
<td>0 mg/L (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>Freshwater sediment</td>
<td>0 mg/kg dry weight (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>Marine sediment</td>
<td>0 mg/kg dry weight (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>Agricultural soil</td>
<td>0 mg/kg dry weight (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>Secondary Poisoning - inhalative</td>
<td>0 mg/m³ (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>Secondary poisoning - oral</td>
<td>0 mg/kg bw/day (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>Secondary poisoning - combined</td>
<td>0 (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>routes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.3.2. Worker exposure: Use in closed batch process (synthesis or formulation) (PROC3)
1.3.3. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>Health effect</th>
<th>Exposure indicator</th>
<th>Exposure level</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>dermal</td>
<td>systemic</td>
<td>long-term</td>
<td>0.138 mg/kg bw/day (ECETOC TRA worker V3)</td>
<td>0.184</td>
</tr>
<tr>
<td>inhalative</td>
<td>systemic</td>
<td>long-term</td>
<td>0.01 mg/m³ (ECETOC TRA worker V3)</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>combined routes</td>
<td></td>
<td></td>
<td></td>
<td>0.188</td>
</tr>
</tbody>
</table>

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

In addition to the displayed PROC all PROC could be regarded as safe uses that could be deduced from “PROC Inclusion Hierarchy” (CEFIC, 2011-07-13)

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.
ES2: Worker (industrial) - Use as stabilizer in formaldehyde solutions

2.1. Title section

Structured Short Title : Worker (industrial) - Use as stabilizer in formaldehyde solutions

Environment

| CS1 | Worker (industrial) - Use as stabilizer in formaldehyde solutions | ERC4 |
| CS2 | Worker (industrial) - Use as stabilizer in formaldehyde solutions | PROC3 |
| CS3 | Worker (industrial) - Use as stabilizer in formaldehyde solutions | PROC8b |

2.2. Conditions of use affecting exposure

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

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

| Daily amount per site | 160 kg |
| Annual amount per site | 8000 kg |
| Release type | Continuous release |
| Emission days | 50 |

Technical and organisational conditions and measures

Central biological waste water treatment
Water - minimum efficiency of 33 %

Conditions and measures related to sewage treatment plant

| STP type | Onsite STP |
| efficiency of sewage treatment plant | 33 % |

Conditions and measures related to treatment of waste (including article waste)

Waste treatment : See Section 13 of the Safety Data Sheet.

Other conditions affecting environmental exposure

| Receiving surface water flow | 18000 m³/d |
2.2.2. Control of worker exposure: Use in closed batch process (synthesis or formulation) (PROC3)

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

Amount used, frequency and duration of use (or from service life)
Duration : duration of activity < 8 h

Technical and organisational conditions and measures
Local exhaust ventilation
Inhalation - minimum efficiency of 90 %

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.
Dermal - minimum efficiency of 80 %

Other conditions affecting workers exposure
Body parts exposed : <= 240 cm2
Indoor or outdoor use : Indoor use.
Professional or industrial settings : Industrial use
Temperature : Covers use at ambient temperatures.
Ventilation rate per hour : 3

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply
Occupational Health and Safety Management System: Advanced

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

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

Amount used, frequency and duration of use (or from service life)
Technical and organisational conditions and measures

Local exhaust ventilation
Inhalation - minimum efficiency of 95 %

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

Wear suitable gloves tested to EN374.
Dermal - minimum efficiency of 95 %
Wear a respirator conforming to EN140.
Inhalation - minimum efficiency of 90 %

Other conditions affecting workers exposure

Body parts exposed : <= 240 cm²
Indoor or outdoor use : Indoor use.
Professional or industrial settings : Industrial use
Temperature : Covers use at ambient temperatures.
Ventilation rate per hour : 3

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

Occupational Health and Safety Management System: Advanced

2.3. Exposure estimation and reference to its source

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

<table>
<thead>
<tr>
<th>Compartment</th>
<th>Exposure level</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewage treatment plant.</td>
<td>0 mg/L (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>Freshwater</td>
<td>0 mg/L (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>Marine water</td>
<td>0 mg/L (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>Freshwater sediment</td>
<td>0 mg/kg dry weight (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>Marine sediment</td>
<td>0 mg/kg dry weight (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>Agricultural soil</td>
<td>0 mg/kg dry weight (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>Secondary Poisoning - inhalative</td>
<td>0 mg/m³ (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>Secondary poisoning - oral</td>
<td>0 mg/kg bw/day (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>Secondary poisoning - combined</td>
<td>0 (EUSES)</td>
<td>&lt; 0,01</td>
</tr>
<tr>
<td>routes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.3.2. Worker exposure: Use in closed batch process (synthesis or formulation) (PROC3)

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>Health effect</th>
<th>Exposure indicator</th>
<th>Exposure level</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>dermal</td>
<td>systemic</td>
<td>long-term</td>
<td>0.138 mg/kg bw/day (ECETOC TRA worker V3)</td>
<td>0.184</td>
</tr>
<tr>
<td>inhalative</td>
<td>systemic</td>
<td>long-term</td>
<td>0.1 mg/m³ (ECETOC TRA worker V3)</td>
<td>0.038</td>
</tr>
<tr>
<td>combined routes</td>
<td></td>
<td></td>
<td></td>
<td>0.222</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>Health effect</th>
<th>Exposure indicator</th>
<th>Exposure level</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>dermal</td>
<td>systemic</td>
<td>long-term</td>
<td>0.685 mg/kg bw/day (ECETOC TRA worker V3)</td>
<td>0.914</td>
</tr>
<tr>
<td>inhalative</td>
<td>systemic</td>
<td>long-term</td>
<td>0.001 mg/m³ (ECETOC TRA worker V3)</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>combined routes</td>
<td></td>
<td></td>
<td></td>
<td>0.914</td>
</tr>
</tbody>
</table>

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

In addition to the displayed PROC all PROC could be regarded as safe uses that could be deduced from “PROC Inclusion Hierarchy” (CEFIC, 2011-07-13)

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.