



**SAFETY DATA SHEET** according to Regulation (EC) No. 1907/2006

**Star Engine Water Treatment TRAC 118 - PRODUCT CODE: 00910102**

**Section: 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**1.1 Product identifier:** **Star Engine Water Treatment TRAC 118**  
Substance type: CLP Mixture

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

Use of the Substance/Mixture : CLOSED LOOP TREATMENT  
Identified uses : Closed loop Cooling Water Treatment  
Recommended restrictions on use : Reserved for industrial and professional use.

**1.3 Details of the supplier of the safety data sheet:**

**LOCAL COMPANY IDENTIFICATION**

Star International, Star House, Turbine Business Park, Turbine Road,  
Birkenhead, Merseyside CH41 9BA United Kingdom  
Tel: +44 (0) 1244 504500  
Email: enquiries@star-international.co.uk

For Product Safety information please contact:

**1.4 Emergency telephone number:**

Emergency telephone number : +44 (0) 1244 504 500

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**Section: 2. HAZARDS IDENTIFICATION**

**2.1 Classification of the substance or mixture**

**Classification (REGULATION (EC) No 1272/2008)**

Acute toxicity, Category 4	H302
Skin corrosion, Category 1A	H314
Serious eye damage, Category 1	H318
Acute aquatic toxicity, Category 1	H400

**2.2 Label elements**

**Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H400 Very toxic to aquatic life.

Precautionary Statements : **Prevention:**  
P210 Keep away from heat, hot surfaces, sparks,

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P220 open flames and other ignition sources. No smoking.  
 Keep/Store away from clothing and other combustible materials.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Hazardous components which must be listed on the label:

- Sodium Nitrite
- Sodium Hydroxide
- Sodium Tolytriazole

**2.3 Other hazards**

None known.

**Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS**

**3.2 Mixtures**

**Hazardous components**

Chemical Name	CAS-No. EC-No. REACH No.	Classification (REGULATION (EC) No 1272/2008)	Concentration: [%]
Sodium Nitrite	7632-00-0 231-555-9 01-2119471836-27	Oxidizing solids Category 3; H272 Acute toxicity Category 3; H301 Acute aquatic toxicity Category 1; H400	30 - < 50
Sodium Borate	13840-56-7 237-560-2	Reproductive toxicity Category 1B; H360FD	2.5 - < 3
Sodium Hydroxide	1310-73-2 215-185-5 01-2119457892-27	Skin corrosion Category 1A; H314 Corrosive to metals Category 1; H290	2.5 - < 5
Sodium Tolytriazole	64665-57-2 265-004-9 01-2119980062-42	Acute toxicity Category 4; H302 Skin corrosion Category 1B; H314 Serious eye damage Category 1; H318 Chronic aquatic toxicity Category 2; H411	1 - < 2.5

For the full text of the H-Statements mentioned in this Section, see Section 16.

**Section: 4. FIRST AID MEASURES**

**4.1 Description of first aid measures**

If inhaled : Remove to fresh air.  
 Treat symptomatically.  
 Get medical attention if symptoms occur.

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- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.  
Use a mild soap if available.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.  
Get medical attention immediately.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing.  
Get medical attention immediately.
- If swallowed : Rinse mouth with water.  
Do NOT induce vomiting.  
Never give anything by mouth to an unconscious person.  
If conscious, give 2 glasses of water.  
Get medical attention immediately.
- Protection of first-aiders : In event of emergency assess the danger before taking action.  
Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

**4.2 Most important symptoms and effects, both acute and delayed**

**See Section 11 for more detailed information on health effects and symptoms.**

**4.3 Indication of immediate medical attention and special treatment needed**

- Treatment : Treat symptomatically.

**Section: 5. FIREFIGHTING MEASURES**

**5.1 Extinguishing media**

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

**5.2 Special hazards arising from the substance or mixture**

- Specific hazards during firefighting : Not flammable or combustible.
- Hazardous combustion products : Depending on combustion properties, decomposition products may include following materials:  
Carbon oxides  
nitrogen oxides (NO<sub>x</sub>)  
Sulphur oxides  
Oxides of phosphorus

**5.3 Advice for firefighters**

- Special protective equipment for firefighters : Use personal protective equipment.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

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**Section: 6. ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures**

- Advice for non-emergency personnel : Ensure adequate ventilation.  
Keep people away from and upwind of spill/leak.  
Avoid inhalation, ingestion and contact with skin and eyes.  
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.  
Ensure clean-up is conducted by trained personnel only.  
Refer to protective measures listed in sections 7 and 8.
- Advice for emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

**6.2 Environmental precautions**

- Environmental precautions : Do not allow contact with soil, surface or ground water.

**6.3 Methods and materials for containment and cleaning up**

- Methods for cleaning up : Stop leak if safe to do so.  
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).  
Flush away traces with water.  
For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

**6.4 Reference to other sections**

- See Section 1 for emergency contact information.  
For personal protection see section 8.  
See Section 13 for additional waste treatment information.

**Section: 7. HANDLING AND STORAGE**

**7.1 Precautions for safe handling**

- Advice on safe handling : Do not ingest. Do not breathe spray, vapour. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

**7.2 Conditions for safe storage, including any incompatibilities**

- Requirements for storage areas and containers : Do not store near acids. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.

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consider the use of certified respiratory protection equipment meeting EU requirements (89/656/EEC, (EU) 2016/425), or equivalent, with filter type:A-P

**Environmental exposure controls**

General advice : Consider the provision of containment around storage vessels.

**Section: 9. PHYSICAL AND CHEMICAL PROPERTIES**

**9.1 Information on basic physical and chemical properties**

Appearance : Liquid

Colour : Light yellow

Odour : no data available

Flash point : 70 °C

pH : 11.4 - 11.8, 100 %

Odour Threshold : no data available

Melting point/freezing point : MELTING POINT: -8 °C

Initial boiling point and boiling range : 100 °C

Evaporation rate : no data available

Flammability (solid, gas) : no data available

Upper explosion limit : no data available

Lower explosion limit : no data available

Vapour pressure : no data available

Relative vapour density : no data available

Relative density : 1.001

Solubility(ies)

Water solubility : completely soluble

Solubility in other solvents : no data available

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

Auto-ignition temperature : no data available

Thermal decomposition : no data available

Viscosity, dynamic : no data available

Viscosity, kinematic : no data available

Explosive properties : no data available

Oxidizing properties : no data available

**9.2 Other information**

no data available

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**8.2 Exposure controls**

**Appropriate engineering controls**

Effective exhaust ventilation system.  
Maintain air concentrations below occupational exposure standards.

**Individual protection measures**

- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.
- Eye/face protection (EN 166) : Safety goggles  
Face-shield
- Hand protection (EN 374) : Recommended preventive skin protection  
Gloves  
Nitrile rubber  
butyl-rubber  
Breakthrough time: 1 – 4 hours  
Minimum thickness for butyl-rubber 0.7 mm for nitrile rubber 0.4 mm or equivalent (please refer to the gloves manufacturer/distributor for advise).  
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Skin and body protection (EN 14605) : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing including appropriate safety shoes
- Respiratory protection (EN 143, 14387) : When respiratory risks cannot be avoided or sufficiently limited by technical means of collective protection or by measures, methods or procedures of work organization, consider the use of certified respiratory protection equipment meeting EU requirements (89/656/EEC, (EU) 2016/425), or equivalent, with filter type:P

**Environmental exposure controls**

- General advice : Consider the provision of containment around storage vessels.

**Section: 9. PHYSICAL AND CHEMICAL PROPERTIES**

**9.1 Information on basic physical and chemical properties**

- Appearance : Liquid
- Colour : Straw-colored
- Odour : odourless
- Flash point : does not flash

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pH	: 13.2 - 14, 100 %
Odour Threshold	: no data available
Melting point/freezing point	: no data available
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: no data available
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: similar to water
Relative vapour density	: no data available
Relative density	: 1.305 - 1.325 (28 °C)
Solubility(ies)	
Water solubility	: completely soluble
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: no data available
Explosive properties	: no data available
Oxidizing properties	: no data available

**9.2 Other information**

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 normal conditions.

**10.3 Possibility of hazardous reactions**

Hazardous reactions : No dangerous reaction known under conditions of normal use.

**10.4 Conditions to avoid**

Conditions to avoid : None known.

**10.5 Incompatible materials**

Materials to avoid : Amines  
Strong acids

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Reducing agents

**10.6 Hazardous decomposition products**

Hazardous decomposition products : Depending on combustion properties, decomposition products may include following materials:  
Carbon oxides  
nitrogen oxides (NO<sub>x</sub>)  
Sulphur oxides  
Oxides of phosphorus

**Section: 11. TOXICOLOGICAL INFORMATION**

**11.1 Information on toxicological effects**

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

**Toxicity**

**Product**

Acute oral toxicity : Acute toxicity estimate : 540.5 mg/kg  
Acute inhalation toxicity : There is no data available for this product.  
Skin corrosion/irritation : There is no data available for this product.  
Serious eye damage/eye irritation : There is no data available for this product.  
Respiratory or skin sensitization : There is no data available for this product.  
Carcinogenicity : There is no data available for this product.  
Reproductive effects : There is no data available for this product.  
Germ cell mutagenicity : There is no data available for this product.  
Teratogenicity : There is no data available for this product.  
STOT - single exposure : There is no data available for this product.  
STOT - repeated exposure : There is no data available for this product.  
Aspiration toxicity : There is no data available for this product.

**Components**

Acute oral toxicity : Sodium Nitrite  
LD50 rat: 180 mg/kg  
  
Sodium Tolyltriazole  
LD50 rat: 1,310 mg/kg

**Potential Health Effects**

Eyes : Causes serious eye damage.



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- Skin : Causes severe skin burns.
- Ingestion : Harmful if swallowed. Causes digestive tract burns.
- Inhalation : May cause nose, throat, and lung irritation.
- Chronic Exposure : Health injuries are not known or expected under normal use.

**Experience with human exposure**

- Eye contact : Redness, Pain, Corrosion
- Skin contact : Redness, Pain, Corrosion
- Ingestion : Corrosion, Abdominal pain
- Inhalation : Respiratory irritation, Cough
- Further information** : no data available

**Section: 12. ECOLOGICAL INFORMATION**

**12.1 Ecotoxicity**

**Product**

- Environmental Effects : Very toxic to aquatic life.
- Toxicity to fish : no data available
- Toxicity to daphnia and other aquatic invertebrates : no data available
- Toxicity to algae : no data available

**Components**

- Toxicity to fish : Sodium Nitrite  
96 h LC50 Fish: 1 mg/l
- Sodium Borate  
96 h LC50: 74 mg/l
- Sodium Tolyltriazole  
96 h LC50 Cyprinodon variegatus (sheepshead minnow): 55 mg/l  
Test substance: Information given is based on data obtained from similar substances.

**Components**

- Toxicity to daphnia and other aquatic invertebrates : Sodium Hydroxide  
48 h EC50: 40 mg/l
- Sodium Tolyltriazole  
48 h EC50 Daphnia galeata (water flea): 8.58 mg/l  
Test substance: Information given is based on data obtained from similar substances.

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**Components**

Toxicity to algae : Sodium Tolyltriazole  
72 h LC50: 26.2 mg/l

**12.2 Persistence and degradability**

**Product**

no data available

**Components**

Biodegradability : Sodium Nitrite  
Result: Not applicable - inorganic

Sodium Borate  
Result: Not applicable - inorganic

Sodium Hydroxide  
Result: Not applicable - inorganic

Sodium Tolyltriazole  
Result: Biodegradable

**12.3 Bioaccumulative potential**

no data available

**12.4 Mobility in soil**

no data available

**12.5 Results of PBT and vPvB assessment**

**Product**

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

**12.6 Other adverse effects**

no data available

**Section: 13. DISPOSAL CONSIDERATIONS**

Dispose of in accordance with the European Directives on waste and hazardous waste. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

**13.1 Waste treatment methods**

Product : The product should not be allowed to enter drains, water courses or the soil.  
Where possible recycling is preferred to disposal or incineration.

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If recycling is not practicable, dispose of in compliance with local regulations.  
Dispose of wastes in an approved waste disposal facility.

- Contaminated packaging : Dispose of as unused product.  
Empty containers should be taken to an approved waste handling site for recycling or disposal.  
Do not re-use empty containers.
- Guidance for Waste Code selection : Inorganic wastes containing dangerous substances. If this product is used in any further processes, the final user must redefine and assign the most appropriate European Waste Catalogue Code. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable European (EU Directive 2008/98/EC) and local regulations.

**Section: 14. TRANSPORT INFORMATION**

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

**Land transport (ADR/ADN/RID)**

- 14.1 UN number: UN 3266  
14.2 UN proper shipping name: CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Sodium Nitrite, Sodium Hydroxide)  
14.3 Transport hazard class(es): 8  
14.4 Packing group: II  
14.5 Environmental hazards: Yes  
14.6 Special precautions for user: Not applicable.

**Air transport (IATA)**

- 14.1 UN number: UN 3266  
14.2 UN proper shipping name: CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Sodium Nitrite, Sodium Hydroxide)  
14.3 Transport hazard class(es): 8  
14.4 Packing group: II  
14.5 Environmental hazards: Yes  
14.6 Special precautions for user: Not applicable.

**Sea transport (IMDG/IMO)**

- 14.1 UN number: UN 3266  
14.2 UN proper shipping name: CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Sodium Nitrite, Sodium Hydroxide)  
14.3 Transport hazard class(es): 8  
14.4 Packing group: II  
14.5 Environmental hazards: Yes (Marine Pollutant)  
14.6 Special precautions for user: Not applicable.  
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.

**Section: 15. REGULATORY INFORMATION**

**Star Engine Water Treatment TRAC 118****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:****INTERNATIONAL CHEMICAL CONTROL LAWS**

## CANADA

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

## United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

## NATIONAL REGULATIONS GERMANY

Water contaminating class : WGK 3  
(Germany) Classification according to AwSV, Annex 1

**15.2 Chemical Safety Assessment:**

A Chemical Safety Assessment has been carried out for the substance(s) that makes/make up this material or for the material itself.

**Section: 16. OTHER INFORMATION****Procedure used to derive the classification according to REGULATION (EC) No 1272/2008**

Classification	Justification
Acute toxicity 4, H302	Calculation method
Skin corrosion 1A, H314	On basis of test data.
Serious eye damage 1, H318	On basis of test data.
Acute aquatic toxicity 1, H400	Calculation method

**Full text of H-Statements**

H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H360FD	May damage fertility. May damage the unborn child.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

**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 – International Air Transport Association; IBC – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 – Half maximal inhibitory concentration; ICAO – International Civil Aviation Organization; IECSC – Inventory of Existing Chemical Substances in China; IMDG – International Maritime Dangerous Goods; IMO – International Maritime Organization; ISHL – Industrial Safety and Health Law (Japan); ISO – International Organisation for

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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; 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**

Sources of key data used to compile the Safety Data Sheet : IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

The possible key literature references and data sources which may have been used in conjunction with the consideration of expert judgment to compile this Safety Data Sheet: European regulations/directives (including (EC) No. 1907/2006, (EC) No. 1272/2008), supplier data, inter-net, ESIS, IUCLID, ERICards, Non European official regulatory data and other data sources.

Prepared By : Regulatory Affairs

Numbers quoted in the MSDS are given in the format: 1,000,000 = 1 million and 1,000 = 1 thousand. 0.1 = 1 tenth and 0.001 = 1 thousandth

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

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.

**Annex: Exposure Scenarios**

**Exposure Scenario: Closed loop Cooling Water Treatment**

Life Cycle Stage : Industrial uses: Uses of substances as such or in preparations at industrial sites

Sector of use : **SU4** Manufacture of food products

**SU5** Manufacture of textiles, leather, fur

**SU6b** Manufacture of pulp, paper and paper products

**SU6a** Manufacture of wood and wood products

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<b>SU7</b>	Printing and reproduction of recorded media
<b>SU8</b>	Manufacture of bulk, large scale chemicals (including petroleum products)
<b>SU9</b>	Manufacture of fine chemicals
<b>SU 10</b>	Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
<b>SU11</b>	Manufacture of rubber products
<b>SU12</b>	Manufacture of plastics products, including compounding and conversion
<b>SU13</b>	Manufacture of other non-metallic mineral products, e.g. plasters, cement
<b>SU14</b>	Manufacture of basic metals, including alloys
<b>SU15</b>	Manufacture of fabricated metal products, except machinery and equipment
<b>SU17</b>	General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment
<b>SU23</b>	Electricity, steam, gas water supply and sewage treatment

**Contributing scenario controlling environmental exposure for:**

Environmental release category : **ERC7** Industrial use of substances in closed systems  
Daily amount per site : 100 kg  
Type of Sewage Treatment Plant : none

**Contributing scenario controlling worker exposure for:**

Process category : **PROC8a** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities  
Exposure duration : 15 min  
Operational conditions and risk management measures : Indoor  
Local Exhaust Ventilation is not required  
General ventilation Ventilation rate per hour: 1  
Skin Protection : Yes: See Section 8  
Respiratory Protection : No

**Contributing scenario controlling worker exposure for:**

Process category : **PROC3** Use in closed batch process (synthesis or formulation)

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Exposure duration : 60 min

Operational conditions and risk management measures : Indoor

Local Exhaust Ventilation is not required

General ventilation Ventilation rate per hour: 1

Skin Protection : Yes: See Section 8

Respiratory Protection : No

**Contributing scenario controlling worker exposure for:**

Process category : **PROC15** Use as laboratory reagent

Exposure duration : 60 min

Operational conditions and risk management measures : Indoor

Local Exhaust Ventilation is not required

General ventilation Ventilation rate per hour: 1

Skin Protection : Yes: See Section 8

Respiratory Protection : No

**Contributing scenario controlling worker exposure for:**

Process category : **PROC28** Manual maintenance (cleaning and repair) of machinery

Exposure duration : 240 min

Operational conditions and risk management measures : Indoor

Local Exhaust Ventilation is not required

General ventilation Ventilation rate per hour: 1

Skin Protection : Yes: See Section 8

Respiratory Protection : No

