



SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision date 01.02.2016

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

- 1.1. Product identifier:** TYFOXIT® 1.25
- 1.2. Relevant identified uses of the substance or mixture and uses advised against**
Relevant identified uses: Secondary coolant down to -55 °C for indirect refrigeration systems
- 1.3. Details of the supplier of the safety data sheet**
Company: TYFOROP Chemie GmbH, Anton-Rée-Weg 7, D-20537 Hamburg
Telephone/Telefax: Tel.: +49 (0)40 20 94 97 0, Fax: +49 (0)40 20 94 97 20
E-Mail: msds@tyfo.de (E-Mail address of person responsible for SDS)
- 1.4. Emergency telephone number:** Tel.: +49 (0)551-19240 GIZ-Nord Poison Center

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Classification according to Directive 67/548/EEC [DSD] / 1999/45/EC [DPD]
The product is not subject to classification	The product is not classified as hazardous

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

The product is not subject to labelling. Although the product is not subject to labelling, we recommend to observe the following precautionary statements.

Precautionary Statements (Prevention)

- P262 Do not get in eyes, on skin, or on clothing
P264 Wash skin with plenty of water and soap thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P280 Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements (Response)

- P301+P315 IF SWALLOWED: Rinse mouth. Get immediate medical advice/attention
+P330
P305+P351 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
+P338

2.3. Other hazards: None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical nature: Aqueous solution of potassium acetate with inhibitors.

Substance / REACH registration number	Content	CAS number	EC number	INDEX number	Classification acc. CLP	Classification acc. DSD
Potassium acetate	< 50 %	127-08-2	204-822-2	-	-	-
-						

The full text of the abbreviations is listed in section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

- General advice:** Remove contaminated clothing immediately.
- Protection of first-aiders:** First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.
- If inhaled:** If inhaled, remove to fresh air. Get medical attention if symptoms occur.

SECTION 4: First aid measures - Continuation

- I **On skin contact:** Wash thoroughly with soap and water. Get medical attention if symptoms occur.
 - I **On contact with eyes:** Wash affected eyes for at least 15 minutes under running water with eyelids held open. Get medical attention if irritation develops and persists.
 - I **On ingestion:** Rinse mouth thoroughly with water. DO NOT induce vomiting. Get medical attention if symptoms occur.
- 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**
Treatment: Symptomatic treatment (decontamination, vital functions).

SECTION 5: Firefighting measures

- 5.1. Extinguishing media**
- I **Suitable extinguishing media:** Water spray. Alcohol-resistant foam. Dry powder. Carbon dioxide (CO₂).
 - I **Unsuitable extinguishing media:** None known.
- 5.2. Special hazards arising from the substance or mixture**
- I **Specific hazards during firefighting:** Exposure to combustion products may be a hazard to health.
 - I **Hazardous combustion products:** Carbon oxides.
- 5.3. Advice for fire-fighters**
- I **Special protective equipment:** In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.
 - I **Specific extinguishing methods:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so.

SECTION 6: Accidental release measures

- 6.1. Personal precautions, protective equipment and emergency procedures**
- I **Personal precautions:** Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.
- 6.2. Environmental precautions**
- I Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
- 6.3. Methods and material for containment and cleaning up**
- I **Methods for cleaning up:** Soak up with inert absorbent material. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 provide information regarding certain local or national requirements.
- I **6.4. Reference to other sections:** See sections 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

- 7.1. Precautions for safe handling**
- I **Technical measures:** See Engineering measures in section 8.
 - I **Local/total ventilation:** Use only with adequate ventilation.
 - I **Advice on safe handling:** Handle in accordance with good industrial hygiene and safety practice. Take care to prevent spills, waste and minimize release to the environment.

SECTION 7: Handling and storage - Continuation

- I **Advice on protection against fire and explosion:** Observe the general rules of industrial fire protection.
- I **Hygiene measures:** When using do not eat, drink or smoke. Wash contaminated clothing before re-use.
- 7.2. Conditions for safe storage, including any incompatibilities**
- I **Requirements for storage areas and containers:** Store containers tightly sealed in a cool, dry and well ventilated place. Store in accordance with the particular national regulations.
- I **Advice on common storage:** Do not store with acids and oxidizing agents. Keep away from food, beverages and animal feedstuffs.
- 7.3. Specific end uses**
- For the relevant identified uses listed in section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure control/personal protection

- 8.1. Control parameters**
- Components with occupational exposure limits**
- Contains no substances with occupational exposure limit values.
- 8.2. Exposure controls**
- I **Engineering measures:** Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.
- Personal protective equipment**
- Eye protection:** Safety glasses with side-shields (frame goggles, e.g. EN 166).
- I **Hand protection:** Chemical resistant protective gloves (EN 374). Material: butyl rubber. Protective index 6. Break through time: >480 minutes. Glove thickness: 0.7 mm. Material: nitrile rubber. Protective index 2. Break through time: >30 minutes. Glove thickness: 0.4 mm. Remarks: Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the manufacturer. Wash hands before breaks and at the end of workday.
- I **Skin and body protection:** Wash skin thoroughly after contact.
- I **Respiratory protection:** Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Filter type: Particulate type (P).

SECTION 9: Physical and chemical properties

- 9.1. Information on basic physical and chemical properties**
- Appearance:** liquid.
- Colour:** colourless.
- I **Odour:** Weak odour of acetic acid.
- I **Odour threshold:** No data available.
- pH value (20 °C):** 10.0 - 11.0. (ASTM D 1287)
- Solidification temperature:** ≤-50 °C. (DIN ISO 3016)
- Initial boiling point/boiling range:** >100 °C. (ASTM D 1120)
- Flash point:** not applicable. (DIN EN 22719, ISO 2719)
- I **Evaporation rate:** No data available.
- I **Flammability (solid, gas):** not applicable.
- Upper explosion limit:** not applicable.
- Lower explosion limit:** not applicable.
- Vapour pressure (20 °C):** ca. 20 hPa. (calculated)
- I **Vapour density:** No data available.
- Density (20 °C):** 1.250 - 1.255 g/cm³. (DIN 51757)
- Solubility:** Water solubility: soluble.
- Partition coefficient n-octanol/H₂O:** No data available.
- Auto-ignition temperature:** No data available.
- I **Decomposition temperature:** No data available.

SECTION 9: Physical and chemical properties - Continuation

Viscosity (kinematic, 20 °C):	3.9 - 4.9 mm ² /s.	(DIN 51562)
Explosive properties:	not explosive.	
Oxidizing properties:	not oxidizing.	
9.2. Other Information:	No other information.	

SECTION 10: Stability and reactivity

10.1. Reactivity:	No hazardous reactions if stored and handled as prescribed/indicated.
10.2. Chemical stability:	The product is stable if stored and handled as prescribed/indicated.
10.3. Possibility of hazardous reactions:	No hazardous reactions if stored and handled as prescribed/indicated.
10.4. Conditions to avoid:	No conditions to avoid anticipated.
10.5. Incompatible materials:	Substances to avoid: strong oxidising agents, strong acids.
10.6. Hazardous decomposition products:	No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information on likely routes of exposure:	Inhalation. Skin contact. Ingestion. Eye contact.
Acute toxicity:	Not classified based on available information. Information on compon. Potassium acetate: Acute oral toxicity: LD50 (Rat): 3250 mg/kg. Acute inhalation toxicity: No data available. Acute dermal toxicity: No data available.
Skin corrosion/irritation:	Not classified based on available information. Information on component Potassium acetate: No skin irritation (Rabbit), method: OECD test guideline 404.
Serious eye damage/eye irritation:	Not classified based on available information. Information on component Potassium acetate: No eye irritation (Rabbit), method: OECD test guideline 405.
Respiratory or skin sensitisation:	Skin sensitisation: Not classified based on available information. Respiratory sensitisation: Not classified based on available information.
Germ cell mutagenicity:	Not classified based on available information. Information on component Potassium acetate: Genotoxicity in vitro: not mutagenic (Bacteria, Ames-Test).
Carcinogenicity:	Not classified based on available information.
Reproductive toxicity:	Not classified based on available information.
Specific target organ toxicity (single exposure):	Not classified based on available information.
Specific target organ toxicity (repeated exposure):	Not classified based on available information.
Aspiration toxicity:	Not classified based on available information.

SECTION 12: Ecological information

12.1. Toxicity

Information on component Potassium acetate

Toxicity to	Value / exposure time	Species
fish	LC50: >1000 mg/l / 96 h	Salmo gairdnerii Method: OECD test guideline 204
daphnia and other aquatic invertebrates	EC50: 460 mg/l / 48 h	Daphnia magna (Water flea)
algae	NOEC: 1000 mg/l / 72 h	-

SECTION 12: Ecological information - Continuation

12.2. Persistence and degradability:	Information on component Potassium acetate: Biodegradability: Biodegradation: 49 % (5 d), method: OECD test guideline 301 A. Result: readily biodegradable.
12.3. Bioaccumulative potential:	No data available.
12.4. Mobility in soil:	No data available.
12.5. Results of PBT and vPvB assessment:	The product does not contain a substance fulfilling the PBT criteria (persistent/bioaccumulative/toxic) or the vPvB criteria (very persistent/very bioaccumulative).
12.6. Other adverse effects:	No data available.
12.7. Further information:	No further information.

SECTION 13: Disposal considerations

13.1. Waste treatment methods	
Product:	Dispose of in accordance with local regulations. According to the European Waste Catalogue (EWC), waste codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.
Contaminated packaging:	Dispose of as the product. Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

	ADR/ RID	ADN	IMDG	IATA/ ICAO
	Not classified as a dangerous good under transport regulations			
14.1. UN number	-	-	-	-
14.2. UN proper shipping name	-	-	-	-
14.3. Transport hazard classes	-	-	-	-
14.4. Packing group	-	-	-	-
14.5. Environmental hazards	-	-	-	-
14.6. Special precautions for user	-	-	-	-

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not evaluated.

SECTION 15: Regulatory information

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

Legal basis	Remark / Evaluation
Regulation (EC) No. 649/2012 of the European Parliament and the Council concerning the export and import	Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59)	Not applicable
Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer	Not applicable
Regulation (EC) No. 850/2004 on persistent organic pollutants	Not applicable
Seveso III - Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances	Not applicable

Other regulations

No further information.

15.2. Chemical Safety Assessment

A Chemical Safety Assessment was not carried out for the product.

SECTION 16: Other information

Full text of the abbreviations of classifications, H-Statements and R-Phrases used in sections 2 and 3

Not applicable

Other abbreviations used in this safety data sheet in alphabetical order

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
ASTM	American Society for Testing and Materials
CAS number	Chemical Abstracts Service number
CLP	Regulation (EC) No. 1272/2008 on classification, labeling and packaging of chemical substances and mixtures
DIN	German Institute for Standardisation/German Industrial Standard
DPD	Dangerous Preparations Directive 1999/45/EC
DSD	Dangerous Substance Directive 67/548/EEC
EC50	Median Effective Concentration
EC number	EINECS number (European Inventory of Existing Substances) or ELINCS number (European List of Notified Chemical Substances)
IATA	International Air Transport Association
IBC	International Bulk Chemicals
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
INDEX number	Identification code for hazardous substances, Annex VI of Regulation (EC) No. 1272/2008
ISO	International Organisation for Standardisation/International Standard
LC50	Median Lethal Concentration
LD50	Median Lethal Dose
MARPOL	International Convention for the Prevention of Marine Pollution from Ships
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Cooperation and Development
REACH	Regulation (EC) No. 1907/2006 on Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulation concerning the international carriage of dangerous goods by rail

Further information

Sources of key data used to compile the safety data sheet: Internal technical data, data from component SDS, OECD eChem Portal search results and European Chemicals Agency [ECHA].

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Vertical lines in the left hand margin indicate an amendment from the previous version.

The information provided in this safety data sheet (SDS) is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific product identified at the top of this SDS and may not be valid when the SDS product is used in combination with any other materials or in any process, unless specified in the text. Product users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS product in the user's end product, if applicable.