



**Safety Data Sheet**  
according to 1907/2006/EC (REACH)

Printing date: 20.04.2012

Revision: 18.04.2012

**1 Identification of the substance/preparation and of the company/undertaking****1.1 Product identifiers**Product name: **TEMPO – glycerol ketal**

CAS-No: 150980-90-8

EC No: -

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

Identified uses: Laboratory chemicals, Manufacture of substances

**1.3 Details of the supplier of the safety data sheet**Manufacturer/Supplier: VUP, a.s.  
Nábrežná 4  
971 04 Prievidza, Slovak Republic

Telephone: 00421-46-5430841

Fax: 00421-46-5430261

E-mail address: kbu@vupas.sk

**1.4 Emergency telephone number****2 Hazards identification****2.1 Classification of the substance or mixture:****Classification and labelling according to Regulation (EC) No 1272/2008**

Skin irritation (Category 2)

Eye irritation (Category 2)

Specific target organ toxicity - single exposure (Category 3)

Acute Tox. 4

**2.2 Label elements****Pictogram:****Signal word:** Warning**Hazard statement(s):**

H302: Harmful if swallowed.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

**Precautionary statements:**

P261: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P305+P351+P338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

**Classification and labelling according to 67/548/EEC or 1999/45/EC****Hazard symbol****Risk phrase(s):**

R 22 Harmful if swallowed.

R36/37/38 Irritating to eyes, respiratory system and skin.

**Safety phrase(s):**

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

R 36/37/38 Irritating to eyes, respiratory system and skin.

**2.3 Other hazards - none**

(Contd. on page 2)

Product name: **TEMPO – glycerol ketal**

(Contd. of page 1)

### 3 Composition/information on ingredients

#### 3.1 Substances

Synonyms: 1,4-dioxa-8-aza-spiro[4.5]dec-8-yloxy, 2-(hydroxymethyl)-7,7,9,9-tetramethyl-;  
2-methylol-7,7,9,9-tetramethyl-1,4-dioxa-8-azaspiro[4.5]decan-8-yloxy;  
Molecular Formula: C<sub>12</sub>H<sub>22</sub>NO<sub>4</sub>  
Molecular Weight: 244.31 g/mol

| Name                   | CAS         | EINECS | Classification                                                                                 | Concentration |
|------------------------|-------------|--------|------------------------------------------------------------------------------------------------|---------------|
| TEMPO – glycerol ketal | 150980-90-8 | -      | Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2;<br>STOT SE 3; H302; H315; H319; H335;<br>Xi, R36/37 | min. 97 % wt. |

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

### 4 First aid measures

#### 4.1 Description of first aid measures

**General information:** Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact:** Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### 4.3 Indication of any immediate medical attention and special treatment needed

no data available

### 5 Fire-fighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing media

Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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

Carbon oxides, nitrogen oxides (NO<sub>x</sub>)

#### 5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

#### 5.3 Further information:

no data available

### 6 Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

(Contd. on page 3)

Product name: **TEMPO – glycerol ketal**

(Contd. of page 2)

**6.2 Environmental precautions:**

Do not let product enter drains.

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

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

## 7 Handling and storage

**7.1 Precautions for safe handling:**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

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

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

## 8 Exposure controls/personal protection

**8.1 Control parameters**

Contains no substances with occupational exposure limit values.

**8.2 Exposure controls**

**Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment**

**Eye/face protection:** Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Body Protection** Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection** For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

## 9 Physical and chemical properties

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

- |                                             |                   |
|---------------------------------------------|-------------------|
| a) Appearance:                              | red-orange liquid |
| b) Odour:                                   | no data available |
| c) Odour Threshold:                         | no data available |
| d) pH:                                      | no data available |
| e) Melting point/freezing point:            | no data available |
| f) Initial boiling point and boiling range: | no data available |
| g) Flash point:                             | no data available |
| h) Evaporation rate:                        | no data available |

(Contd. on page 4)

Product name: **TEMPO – glycerol ketal**

(Contd. of page 3)

- |                                                  |                   |
|--------------------------------------------------|-------------------|
| i) Flammability (solid, gas):                    | no data available |
| j) Upper/lower flammability or explosive limits: | no data available |
| k) Vapour pressure:                              | no data available |
| l) Vapour density:                               | no data available |
| m) Relative density                              | no data available |
| n) Water solubility                              | soluble           |
| o) Partition coefficient (n-octanol/water):      | no data available |
| p) Autoignition temperature:                     | no data available |
| q) Decomposition temperature:                    | no data available |
| r) Viscosity:                                    | no data available |
| s) Explosive properties:                         | no data available |
| t) Oxidizing properties:                         | no data available |

**9.2 Other safety information**

no data available

**10 Stability and reactivity**

- 10.1 Reactivity:** no data available
- 10.2 Chemical stability:** no data available
- 10.3 Possibility of hazardous reactions:** no data available
- 10.4 Conditions to avoid:** no data available
- 10.5 Incompatible materials:** Strong oxidizing agents
- 10.6 Hazardous decomposition products:** Other decomposition products - no data available.

**11 Toxicological information**

**11.1 Information on toxicological effects**

**Acute toxicity:** no data available

**Skin corrosion/irritation:** no data available

**Serious eye damage/eye irritation:** no data available

**Respiratory or skin sensitization:** no data available

**Germ cell mutagenicity:** no data available

**Carcinogenicity**

**IARC:** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity:** no data available

**Specific target organ toxicity - single exposure:** no data available

**Specific target organ toxicity - repeated exposure:** no data available

**Aspiration hazard:** no data available

**Potential Health Effects**

**Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation.

**Skin:** May be harmful if absorbed through skin. Causes skin burns.

**Eyes:** May cause serious eye irritation.

**Ingestion:** May be harmful if swallowed.

**Signs and Symptoms of Exposure**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Additional Information**

**RTECS:** Not available

(Contd. on page 5)

Printing date: 20.04.2012

Revision: 18.04.2012

Product name: **TEMPO – glycerol ketal**

(Contd. of page 4)

## 12 Ecological information

Data not yet available.

## 13 Disposal considerations

### 13.1 Waste treatment methods

**Product:**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging:**

Dispose of as unused product.

## 14 Transport information

### 14.1 UN number

ADR/RID / IMDG / IATA: -

### 14.2 UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

### 14.3 Transport hazard class(es)

ADR/RID / IMDG / IATA: -

### 14.4 Packaging group

ADR/RID / IMDG / IATA: -

### 14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

### 14.6 Special precautions for user

no data available

## 15 Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

## 16 Other information

This Safety Data Sheet is not a Product Specification. It is based on our present knowledge and experience and it is intended to serve as a guide for safe handling of the product regarding to health and environmental aspects.

**Text of H-code(s) and R-phrase(s) mentioned in Section 3:**

H302: Harmful if swallowed.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

R36/37/38 Irritating to eyes, respiratory system and skin..

**Abbreviations and acronyms:**

CAS            Chemical Abstracts Service registry number

EC             European Commission number (for European Inventory of Existing Chemical Substances)

(Contd. on page 6)

**Safety Data Sheet**  
**according to 1907/2006/EC (REACH)**

Page 6/6

Printing date: 20.04.2012

Revision: 18.04.2012

Product name: **TEMPO – glycerol ketal**

(Contd. of page 5)

|             |                                                                                                                                                                                 |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Skin Irrit. | Skin Irritation                                                                                                                                                                 |
| Eye Irrit   | Eye Irritation                                                                                                                                                                  |
| STOT SE     | Specific target organ systemic toxicity following single exposure                                                                                                               |
| Acute Tox.  | Acute Toxicity                                                                                                                                                                  |
| RTECS:      | Registry of Toxic Effects of Chemical Substances                                                                                                                                |
| ADR:        | Accord européen sur le transport des marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)                   |
| RID:        | Reglement internationale concernent le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) |
| IMDG:       | International Maritime Code for Dangerous Goods                                                                                                                                 |
| ICAO:       | International Civil Aviation Organization                                                                                                                                       |
| ICAO-TI:    | Technical Instructions by the "International Civil Aviation Organization" (ICAO)                                                                                                |
| IATA:       | International Air Transport Association                                                                                                                                         |
| IATA-DGR:   | Dangerous Goods Regulations by the "International Air Transport Association" (IATA)                                                                                             |