



Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date: 20.09.2018

Revision: 20.09.2018

1 Identification of the substance/preparation and of the company/undertaking

Product name: **4-Oxo-TEMPO**
CAS-No.: 2896-70-0
Identified uses: Chemical speciality
Manufacturer/Supplier: VUP, a.s.
Nábrežná 4
971 04 Prievidza, Slovak Republic
Tel: 00421-46-5430841
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2 Hazards identification

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Acute aquatic toxicity (Category 1)

Label elements

Pictogram:



Signal word: Warning

Hazard statement(s):

H400: Very toxic to aquatic life.

Precautionary statement(s):

P273: Avoid release to the environment.

3 Composition/information on ingredients

Synonyms: 2,2,6,6-Tetramethyl-4-oxo-piperidine-1-oxyl; 2,2,6,6-Tetramethyl-4-oxo-1-piperidinyloxy;
4-Oxo-2,2,6,6-tetramethylpiperidinoxy; 2,2,6,6-Tetramethyl-4-piperidone 1-nitroxide;

Molecular Formula: $C_9H_{16}NO_2$

Molecular Weight: 170.23 g/mol

Name	CAS	EINECS	Classification GHS	Concentration
4-Oxo-TEMPO	2896-70-0	220-778-7	Acute aquatic tox. 1; H400;	min. 97 %

For the full text of the H-Statements mentioned in this Section, see Section 2.

4 First aid measures

Description of first aid measures

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

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

After skin contact: Wash off with soap and plenty of water. Consult a physician.

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After eye contact: Flush eyes with water as a precaution.

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

5 Fire-fighting measures

Suitable extinguishing media:

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

Special hazards arising from the substance or mixture:

Carbon oxides, nitrogen oxides (NO_x)

Precautions for fire-fighters:

Wear self contained breathing apparatus for fire fighting if necessary.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures:

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

Environmental precautions:

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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.

7 Handling and storage

Precautions for safe handling:

Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage, including any incompatibilities:

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

Recommended storage temperature: 2 - 8 °C

8 Exposure controls/personal protection

Control parameters

Components with workplace control parameters

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:

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.

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Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9 Physical and chemical properties

Appearance

Form: solid
Colour: orange-red

Safety data

pH: Not available.
Boiling Point: Not available.
Melting Point: 36 - 37 °C
Flash Point: Not available.
Density: 1.0223 g.cm⁻³ at 40 °C
Partition coefficient (n-octanol/water): 0,25
Water solubility: 77 g/1 000 g at 20 °C

10 Stability and reactivity

Storage stability:

Stable under recommended storage conditions.

Incompatible materials:

Strong oxidizing agents.

Hazardous decomposition products:

Other decomposition products - no data available.

11 Toxicological information

Acute effects

No data available.

Irritation and corrosion

No data available.

Sensitisation

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

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no data available

Potential Health Effects

- Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation.
Skin: May be harmful if absorbed through skin. May cause skin irritation.
Eyes: May cause eye irritation.
Ingestion: May be harmful if swallowed.

Additional Information

RTECS: TN9200000

12 Ecological information

Toxicity

Toxicity to fish LC50 - *Gambusia affinis* (Mosquito fish) - 0,1 mg/l - 96 h.

13 Disposal considerations

Product: Offer surplus and non-recyclable solutions to a licensed disposal company. 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

RID/ADR

UN Number: 3077
Hazard Class: 9
Packaging group: III
Shipping Name: Environmentally hazardous substance, solid, n.o.s. (2,2,6,6-Tetramethyl-4-oxopiperidinoxy)

IMDG

UN number: 3077
Hazard class: 9
Packaging group: III
Shipping name: Environmentally hazardous substance, solid, n.o.s. (2,2,6,6-Tetramethyl-4-oxopiperidinoxy)
Marine pollutant: Yes

IATA

UN number: 3077
Hazard class: 9
Packaging group: III
Shipping name: Environmentally hazardous substance, solid, n.o.s. (2,2,6,6-Tetramethyl-4-oxopiperidinoxy)

Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15 Regulatory information

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

16 Other information

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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.

Abbreviations and acronyms:

CAS	Chemical Abstracts Service registry number
EC	European Commission number (for European Inventory of Existing Chemical Substances)
Acute aquatic tox.	Acute aquatic 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
IATA:	International Air Transport Association

Classification according to Regulation (EC) No 1272/2008

Acute aquatic toxicity (Category 1)

Hazard statement(s):

H400: Very toxic to aquatic life.