

SAFETY DATA SHEET

Version: v1
Revision Date: 2023-11-09

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

1.1 Product identifiers

Product name : TEMPO
Product Number : T106827
Brand : aladdin
CAS-No. : 2564-83-2

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

Company : Shanghai Aladdin Biochemical Tech Co., Ltd
Address : 36 Xinjinqiao Road, Shanghai
Telephone : 400-620-6333
Fax : no data available

1.4 Emergency telephone number

Emergency Phone : 0532-83889090

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin corrosion/irritation (Category 1C), H314

Serious eye damage/eye irritation (Category 1), H318

Short-term (acute) aquatic hazard (Category 3), H402

Long-term (chronic) aquatic hazard (Category 3), H412

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H314 Causes severe skin burns and eye damage

H412 Harmful to aquatic life with long lasting effects

Precautionary statement(s)

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash hands [and ...] thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P310	Immediately call a POISON CENTER or doctor/physician.
P363	Wash contaminated clothing before reuse.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P405	Store locked up.
P501	Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS**SECTION 3: Composition/information on ingredients****3.1 Substances**

Synonyms	: TEMPO free radical; 2,2,6,6-Tetramethyl-1-piperidinyloxy, free radical; 2,2,6,6-Tetramethylpiperidinoxy; 2,2,6,6-Tetramethylpiperidine 1-oxyl
Formula	: C ₉ H ₁₈ NO
Molecular weight	: 156.25
CAS No.	: 2564-83-2
EC-NO.	: 219-888-8

Component	Classification	Concentration
TEMPO	no data available	98%

SECTION 4: First aid measures**4.1 Description of first aid measures****General advice**

Show this material safety data sheet to the doctor in attendance.

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

In case of skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

In case of eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

If swallowed

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

no data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

no data available

5.2 Special hazards arising from the substance or mixture

Carbon oxides Nitrogen oxides (NOx) Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

no data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources

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of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Operators should be specially trained and strictly abide by the operating procedures. Operation and disposal should be carried out in a place with local ventilation or general ventilation facilities. Avoid eye and skin contact and avoid breathing vapor. See Section 8 for personal protective measures. Keep away from fire and heat sources, and smoking is strictly prohibited in the workplace. Use explosion-proof ventilation systems and equipment. If canning is required, the flow rate should be controlled, and there should be a grounding device to prevent the accumulation of static electricity. Avoid contact with incompatible substances such as oxidizing agents (see section 10 for incompatible substances). When handling, it should be lightly loaded and unloaded to prevent damage to packaging and containers. Empty containers may be harmful residues. Wash hands after use and prohibit eating or drinking in the workplace. Equipped with the corresponding variety and quantity of fire fighting equipment and leakage emer

7.2 Conditions for safe storage, including any incompatibilities

2-8 °C, argon filled storage

7.3 Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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

Eyel/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166(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 Regulation (EU)2016/425 and the standard EN 374

derived from it.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN(EU).

Control of environmental exposure

If safety requires, prevent further leakage or spillage. Do not let the product enter the sewer.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance	form: Powder, Solid, Crystals and/or Chunks color: Orange to Red
b) Odour	no data available
c) Odour Threshold	no data available
d) pH	no data available
e) Melting point/freezing point	39°C
f) Initial boiling point and boiling range	193°C
g) Flash point	152.6 °F, 67°C
h) Evaporation rate	no data available
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 in all organic solvents. Insoluble in water.
o) Partition coefficient: n-octanol/water	no data available
p) Auto-ignition temperature	no data available
q) Decomposition temperature	no data available
r) Viscosity	no data available
s) Explosive properties N	no data available
t) Oxidizing properties N	no data available

9.2 Other safety information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

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Violent reactions possible with: Strong oxidizing agents Strong acids

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Sensitive to heat; Sensitive to air

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

Metals

10.6 Hazardous decomposition products

no data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Oral: No data available Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach. Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit Result: Corrosive, category 1C - where responses occur after exposures between 1 hour and 4 hours and observations up to 14 days. - 4 h (OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit Result: Irreversible effects on the eye(OECD Test Guideline 405)

Respiratory or skin sensitisation

Maximization Test - Guinea pig Result: negative (OECD Test Guideline 406)

Germ cell mutagenicity

Based on available data the classification criteria are not met. Test Type: Ames test Test system: S. typhimurium Metabolic activation: without metabolic activation Method: OECD Test Guideline 471 Result: positive Test Type: Micronucleus test Species: Mouse Cell type: Bone marrow Application Route: Oral Method: Mutagenicity (micronucleus test) Result: negative Test Type: unscheduled DNA synthesis assay Species: Rat Cell type: Liver cells Application Route: Oral Method: OECD Test Guideline 486 Result: negative

Carcinogenicity

no data available

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

Additional Information

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

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to daphnia and other aquatic invertebrates

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d Result: 0 % - Not biodegradable. (OECD Test Guideline 301C)

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

no data available

SECTION 13:

13.1 Disposal considerations

Product

Recycle to process, if possible. Consult your local regional authorities and an expert of disposal. You may be able to dissolve or mix material with a combustible solvent and little by little burn in a chemical incinerator equipped with an afterburner and scrubber system. If a large amount of the substance is burned at a time, an explosion may occur. Observe all federal, state and local regulations when disposing of the substance.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

DOT (US)

UN number: 3263

Packing group: III

Class: 8

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Proper shipping name: CORROSIVE SOLID, BASIC, ORGANIC, N.O.S. (2,2,6,6-四甲基N-六氢吡啶基氧化物)	Reportable Quantity(RQ): no data available	Poison Inhalation Hazard: no data available
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Environmental Hazards: no

IMDG

UN number: 3263	Packing group: III	EMS-No: no data available
Proper shipping name: CORROSIVE SOLID, BASIC, ORGANIC, N.O.S. (2,2,6,6-四甲基N-六氢吡啶基氧化物)		

IATA

UN number: 3263	Packing group: III	Class: 8
Proper shipping name: CORROSIVE SOLID, BASIC, ORGANIC, N.O.S. (2,2,6,6-四甲基N-六氢吡啶基氧化物)		

SECTION 15: Regulatory information

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

SECTION 16: Other information

Further information

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