

Safety Data Sheet
according to 1907/2006/EC, Article 31

Revision: 14.07.2010

Printing date 14.07.2010

1 Identification of substance**Product details****Trade name****TEMPO, free radical****Stock number:**

A12733, L14092

Manufacturer/Supplier:Alfa Aesar GmbH & Co.KG
Benzstrasse 3
D-76185 Karlsruhe / GermanyE-mail: gcat@matthey.com
www.alfa-chemcat.com**Informing department:**

Product safety department.

Emergency information:Giftnotruf Universität Mainz / Poison Information Center Mainz
www.giftinfo.uni-mainz.de Telefon:+49(0)6131/19240**2 Hazards identification****Hazard designation:**

C Corrosive

**Information pertaining to particular dangers for man and environment
GHS label elements**

R 34 Causes burns.

**Danger****Prevention:**

H314 - Causes severe skin burns and eye damage.

Response:

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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

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

P310 Immediately call a POISON CENTER or doctor/physician.

3 Composition/information on ingredients**Chemical characterization:****Designation: (CAS#)**

2,2,6,6-Tetramethylpiperidinyloxy (CAS# 2564-83-2)

Identification number(s):**EINECS Number:**

219-888-8

4 First aid measures**General information**

Instantly remove any clothing soiled by the product.

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact

Seek immediate medical advice.

After eye contact

Instantly wash with water and soap and rinse thoroughly.

After swallowing

Seek immediate medical advice.

Rinse opened eye for several minutes under running water. Then consult doctor.

Seek immediate medical advice.

5 Fire fighting measures**Suitable extinguishing agents**

CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

Special hazards caused by the material, its products of combustion or flue gases:

Can be released in case of fire:

Carbon monoxide and carbon dioxide

Nitrogen oxides (NOx)

Possibly Hydrogen cyanide (HCN)

Wear self-contained breathing apparatus.

Wear full protective suit.

Protective equipment:**6 Accidental release measures****Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Measures for environmental protection:

Ensure adequate ventilation

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Use neutralizing agent.

Dispose of contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

7 Handling and storage**Handling****Information for safe handling:**

Keep containers tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Storage**Requirements to be met by storerooms and containers:**

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Store in a locked cabinet or with access restricted to technical experts or their assistants.

8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with critical values that require monitoring at the workplace:

Not required.

Additional information:

No data

Personal protective equipment**General protective and hygienic measures**

The usual precautionary measures should be adhered to in handling the chemicals.

Keep away from foodstuffs, beverages and food.

Instantly remove any soiled and impregnated garments.

Wash hands during breaks and at the end of the work.

Avoid contact with the eyes and skin.

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Breathing equipment:	Use breathing protection with high concentrations.
Protection of hands:	Check protective gloves prior to each use for their proper condition.
Material of gloves	The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
Penetration time of glove material	Impervious gloves
Eye protection:	Not determined Safety glasses Tightly sealed safety glasses. Full face protection
Body protection:	Face protection Protective work clothing.

9 Physical and chemical properties:**General Information**

Form:	Crystalline
Colour:	Red-orange
Smell:	Not determined

Change in condition	
Melting point/Melting range:	32-37°C
Boiling point/Boiling range:	193°C (dec)
Sublimation temperature / start:	Not determined

Flash point:	67°C
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Ignition temperature:	Not determined
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Decomposition temperature:	Not determined
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Danger of explosion:	Product is not explosive.
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Critical values for explosion:	
Lower:	Not determined
Upper:	Not determined

Steam pressure:	Not determined
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Density	Not determined
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Solubility in / Miscibility with Water:	Insoluble
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10 Stability and reactivity

Thermal decomposition / conditions to be avoided:	No decomposition if used and stored according to specifications.
Materials to be avoided:	Oxidizing agents
Dangerous reactions:	No dangerous reactions known
Dangerous products of decomposition:	Carbon monoxide and carbon dioxide Nitrogen oxides (NOx) Possibly Hydrogen cyanide (HCN)

11 Toxicological information**Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral	LDLo	2 gm/kg (rabbit)
Inhalative	LCLo/2H	4500 mg/m ³ /2H (rat)
Irritation of skin	severe	500 mg/4H (rabbit)
Irritation of eyes	severe	100 mg/24H (rabbit)

Primary irritant effect:

on the skin:	Corrosive effect on skin and mucous membranes. Irritant for skin and mucous membranes.
on the eye:	Strong corrosive effect. Irritant effect.

Sensitization: No sensitizing effect known.

Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:**Additional ecological information:**

General notes: Generally not hazardous for water.
Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations

Product:
Recommendation Consult state, local or national regulations for proper disposal.
Hand over to disposers of hazardous waste.
Must be specially treated under adherence to official regulations.

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14 Transport information**Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)**

ADR/RID-GGVS/E Class:	8 (C10) Corrosive substances.
Kemler Number:	80
UN-Number:	1759
Packaging group:	III
Label	8

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Designation of goods: 1759 CORROSIVE SOLID, N.O.S. (2,2,6,6-Tetramethylpiperidinyloxy)
Limited quantities (LQ) LQ24
Transport category 3
Tunnel restriction code E

Maritime transport IMDG/GGVSea:

IMDG/GGVSea Class: 8
UN Number: 1759
Label 8
Packaging group: III
Marine pollutant: No
Correct technical name: CORROSIVE SOLID, N.O.S. (2,2,6,6-Tetramethylpiperidinyloxy)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 8
UN/ID Number: 1759
Label 8
Packaging group: III
Correct technical name: CORROSIVE SOLID, N.O.S. (2,2,6,6-Tetramethylpiperidinyloxy)

UN "Model Regulation": UN1759, CORROSIVE SOLID, N.O.S., 8, III

15 Regulatory information**Designation according to EC guidelines:****Code letter and hazard designation of product:**

C Corrosive

Risk phrases:

34 Causes burns.

Safety phrases:

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

National regulations**Information about limitation of use:**

Employment restrictions concerning young persons must be observed.
 For use only by technically qualified individuals.

Water hazard class:

Generally not hazardous for water.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing data specification sheet: Health, Safety and Environmental Department.**Contact:** Zachariah Holt**Abbreviations and acronyms:** ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant 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

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent