

**Safety Data Sheet**  
According to OSHA and ANSI

Printing date 10/22/2013

Reviewed on 01/26/2009

**1 Identification****Product identifier****Product name:** 2,2,6-Trimethyl-1,3-dioxin-4-one**Stock number:** L08328**CAS Number:**

5394-63-8

**EC number:**

226-403-3

**Relevant identified uses of the substance or mixture and uses advised against.****Identified use:** SU24 Scientific research and development**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

**Information Department:** Health, Safety and Environmental Department**Emergency telephone number:**

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

**2 Hazard(s) identification****Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

GHS02 Flame

H225 Highly flammable liquid and vapour.



GHS07

H319 Causes serious eye irritation.

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Xi; Irritant

R36: Irritating to eyes.



F; Highly flammable

R11: Highly flammable.

**Information concerning particular hazards for human and environment:** Not applicable**Hazards not otherwise classified** No information known.**Label elements****Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labeled according to the CLP regulation.

**Hazard pictograms**

GHS02



GHS07

**Signal word** Danger**Hazard statements**

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

**Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

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.

(Contd. on page 2)

USA

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(Contd. of page 1)

P403+P235 Store in a well-ventilated place. Keep cool.  
P501 Dispose of contents/container in accordance with local/regional/national/  
international regulations.

**WHMIS classification**

B2 - Flammable liquid  
D2B - Toxic material causing other toxic effects

**Classification system**

**HMIS ratings (scale 0-4)**  
(Hazardous Materials Identification System)

HEALTH	1	Health (acute effects) = 1
FIRE	3	Flammability = 3
REACTIVITY	1	Physical Hazard = 1

**Other hazards****Results of PBT and vPvB assessment**

PBT: Not applicable.  
vPvB: Not applicable.

**3 Composition/information on ingredients****Chemical characterization: Substances****CAS# Description:**

5394-63-8 2,2,6-Trimethyl-1,3-dioxin-4-one

**Identification number(s):**

EC number: 226-403-3

**4 First-aid measures****Description of first aid measures****After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.  
Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly.  
Seek immediate medical advice.

**After eye contact**

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

**After swallowing** Seek medical treatment.

**Information for doctor**

**Most important symptoms and effects, both acute and delayed**

No further relevant information available.

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

**5 Fire-fighting measures****Extinguishing media****Suitable extinguishing agents**

Use carbon dioxide, extinguishing powder or foam. Water may be ineffective but may be used for cooling exposed containers.

**Special hazards arising from the substance or mixture**

If this product is involved in a fire, the following can be released:

Carbon monoxide and carbon dioxide

**Advice for firefighters****Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

**6 Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

(Contd. on page 3)

USA

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**Product name: 2,2,6-Trimethyl-1,3-dioxin-4-one**

(Contd. of page 2)

**Environmental precautions:**

Do not allow material to be released to the environment without proper governmental permits.  
Do not allow product to reach sewage system or any water course.  
Do not allow to penetrate the ground/soil.

**Methods and material for containment and cleaning up:**

Keep away from ignition sources.  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Ensure adequate ventilation.

**Prevention of secondary hazards:** Keep away from ignition sources.

**Reference to other sections**

See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

**7 Handling and storage****Handling****Precautions for safe handling**

Keep container tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation at the workplace.

**Information about protection against explosions and fires:**

Protect against electrostatic charges.  
Fumes can combine with air to form an explosive mixture.

**Conditions for safe storage, including any incompatibilities****Storage**

**Requirements to be met by storerooms and receptacles:** Store in a cool location.  
**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.  
**Specific end use(s)** No further relevant information available.

**8 Exposure controls/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.

**Control parameters**

**Components with limit values that require monitoring at the workplace:**

Acetone

	ppm
ACGIH TLV	500; 750-STEL
	Not classified as a human carcinogen
Austria MAK	750
Belgium TWA	750; 1000-STEL
Denmark TWA	250
Finland TWA	500; 625-STEL
France VME	750
Germany MAK	500
Hungary TWA	600 mg/m <sup>3</sup> ; 1200 mg/m <sup>3</sup> -STEL
Japan OEL	200
Korea TLV	500; 750-STEL
Netherlands MAC-TGG	750
Norway TWA	125
Poland TWA	600 mg/m <sup>3</sup> ; 1800 mg/m <sup>3</sup> -STEL
Russia TWA	200; 200-STEL
Sweden NGV	250; 500-KTV
Switzerland MAK-W	500; 1000-STEL
United Kingdom TWA	750; 1500-STEL
USA PEL	1000

**Additional information:** No data

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

The usual precautionary measures for handling chemicals should be followed.  
Keep away from foodstuffs, beverages and feed.  
Remove all soiled and contaminated clothing immediately.  
Wash hands before breaks and at the end of work.

(Contd. on page 4)

USA

## Safety Data Sheet

According to OSHA and ANSI

Printing date 10/22/2013

Reviewed on 01/26/2009

**Product name:** 2,2,6-Trimethyl-1,3-dioxin-4-one

(Contd. of page 3)

Avoid contact with the eyes.  
 Avoid contact with the eyes and skin.  
 Maintain an ergonomically appropriate working environment.  
**Breathing equipment:** Use suitable respirator when high concentrations are present.  
**Protection of hands:**  
 Impervious gloves  
 Check protective gloves prior to each use for their proper condition.  
 The selection of suitable gloves not only depends on the material, but also on quality.  
 Quality will vary from manufacturer to manufacturer.  
**Eye protection:** Safety glasses  
**Body protection:** Protective work clothing.

### 9 Physical and chemical properties

#### Information on basic physical and chemical properties

##### General Information

##### Appearance:

Form:	Liquid
Color:	Brown
Odor:	Acetone-like
Odor threshold:	Not determined.

pH-value:	Not determined.
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##### Change in condition

Melting point/Melting range:	12-13 °C (54-55 °F)
Boiling point/Boiling range:	65-67 °C (149-153 °F) (2 mmHg)
Sublimation temperature / start:	Not determined

Flash point:	14 °C (57 °F)
Flammability (solid, gaseous)	Not determined.
Ignition temperature:	300 °C (572 °F)
Decomposition temperature:	Not determined
Auto igniting:	Not determined.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density at 20 °C (68 °F):	1.094 g/cm <sup>3</sup> (9.129 lbs/gal)
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water at 20 °C (68 °F):	56.3 g/l
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.
Other information	No further relevant information available.

### 10 Stability and reactivity

**Reactivity** No information known.  
**Chemical stability** Stable under recommended storage conditions.  
**Thermal decomposition / conditions to be avoided:**  
 Decomposition will not occur if used and stored according to specifications.  
**Possibility of hazardous reactions** No dangerous reactions known  
**Incompatible materials:** Oxidizing agents  
**Hazardous decomposition products:** Carbon monoxide and carbon dioxide

### 11 Toxicological information

#### Information on toxicological effects

**Acute toxicity:** Skin irritation test: non-irritant (rabbit)  
**LD/LC50 values that are relevant for classification:** No data  
**Skin irritation or corrosion:** No irritant effect.  
**Eye irritation or corrosion:** Causes serious eye irritation.  
**Sensitization:** No sensitizing effects known.  
**Germ cell mutagenicity:** No effects known.

(Contd. on page 5)

USA

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(Contd. of page 4)

**Carcinogenicity:**

EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.

EPA-CBD: Carcinogenic potential cannot be determined.

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

**Reproductive toxicity:** No effects known.

**Specific target organ system toxicity - repeated exposure:** No effects known.

**Specific target organ system toxicity - single exposure:** No effects known.

**Aspiration hazard:** No effects known.

**Subacute to chronic toxicity:**

Acetone may cause narcosis in high concentration. It acts to dry and defat skin, causing irritation. Inhalation may cause headache and dizziness as well as irritation of the respiratory tract. Chronic exposure may cause liver and kidney injury.

**Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

**12 Ecological information****Toxicity**

**Aquatic toxicity:** No further relevant information available.

**Persistence and degradability** No further relevant information available.

**Behavior in environmental systems:**

**Bioaccumulative potential** No further relevant information available.

**Mobility in soil** No further relevant information available.

**Additional ecological information:****General notes:**

Do not allow material to be released to the environment without proper governmental permits. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Avoid transfer into the environment.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

**13 Disposal considerations****Waste treatment methods**

**Recommendation** Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

**14 Transport information****UN-Number**

DOT, ADR, IMDG, IATA

UN1993

**UN proper shipping name**

DOT, IMDG, IATA

FLAMMABLE LIQUID, N.O.S. (2,2,6-Trimethyl-1,3-dioxin-4-one)

ADR

1993 FLAMMABLE LIQUID, N.O.S. , special provision 640D (2,2,6-Trimethyl-1,3-dioxin-4-one)

**Transport hazard class(es)**

DOT

**Class**

3 Flammable liquids.

**Label**

3

(Contd. on page 6)

USA

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Reviewed on 01/26/2009

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(Contd. of page 5)

ADR



**Class** 3 (F1) Flammable liquids  
**Label** 3  
**IMDG, IATA**



**Class** 3 Flammable liquids.  
**Label** 3

**Packing group**  
**DOT, ADR, IMDG, IATA** II

**Environmental hazards:** Not applicable.

**Special precautions for user** Warning: Flammable liquids  
**Danger code (Kemler):** 33

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

**Transport/Additional information:**

**DOT**  
**Marine Pollutant (DOT):** No

**UN "Model Regulation":** UN1993, FLAMMABLE LIQUID, N.O.S. , special provision 640D (2,2,6-Trimethyl-1,3-dioxin-4-one), 3, II

**15 Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**National regulations**

This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only. This product must be used by or directly under the supervision of a technically qualified individual as defined by TSCA. This product must not be used for commercial purposes or in formulations for commercial purposes.

Some or all of the components of this product are not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

**SARA Section 313 (specific toxic chemical listings)** Substance is not listed.

**California Proposition 65**

**Prop 65 - Chemicals known to cause cancer** Substance is not listed.

**Prop 65 - Developmental toxicity** Substance is not listed.

**Prop 65 - Developmental toxicity, female** Substance is not listed.

**Prop 65 - Developmental toxicity, male** Substance is not listed.

**Information about limitation of use:**

For use only by technically qualified individuals.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

**Other regulations, limitations and prohibitive regulations**

**Substances of very high concern (SVHC) according to REACH, Article 57**

Substance is not listed.

**REACH - Pre-registered substances** Substance is listed.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**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.

(Contd. on page 7)

USA

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(Contd. of page 6)

**Department issuing SDS:** Health, Safety and Environmental Department.**Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
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)  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
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)  
HMIS: Hazardous Materials Identification System (USA)  
WHMIS: Workplace Hazardous Materials Information System (Canada)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent

USA