

1 Identification

Product identifier

Product name: Glyoxal trimer, dihydrate

Stock number: A12013 CAS Number: 4405-13-4 EC number:

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 Thermo Fisher Scientific Chemicals, Inc.

Thermo Fisher Scientific S. 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 business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS08 Health hazard

Muta. 2 H341 Suspected of causing genetic defects.

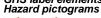


Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation. Hazards not otherwise classified No information known.

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)





GHS07 GHS08

Signal word Warning Hazard statements

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H341 Suspected of causing genetic defects.
H335 May cause respiratory irritation.

Precautionary statements

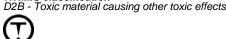
Avoid broathing distilled.

P261 P280 P281

Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P281 Use personal protective equipment as required.
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 in accordance with local/regional/national/international regulations.

WHMIS classification



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



Health (acute effects) = 1 Flammability = 1

TMTY 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: 4405-13-4 Glyoxal trimer, dihydrate

Identification number(s): EC number: 224-551-3

Product name: Glyoxal trimer, dihydrate

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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 immediately wash with water and soap and hirse 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

Extinguishing media
Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
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

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

Methods and material for containment and cleaning up: Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Prevention of secondary hazards: No special measures required. 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: No information known.

Conditions for safe storage, including any incompatibilities

Storage
Requirements to be met by storerooms and receptacles: 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.

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: Not required.

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.
Avaid contact with the over and skip.

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: Color:

Powder White

Not determined Not determined

Odor threshold:

Safety Data Sheet per OSHA HazCom 2012

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Product name: Glyoxal trimer, dihydrate

		(Contd. of page 2)
pH-value:	Not applicable.	
Change in condition Melting point/Melting range: Boiling point/Boiling range: Sublimation temperature / start:	Not determined Not determined Not determined	
Flash point: Flammability (solid, gaseous) Ignition temperature: Decomposition temperature: Auto igniting:	Not applicable Not determined. Not determined Not determined Not determined.	
Danger of explosion: Explosion limits:	Product does not present an explosion hazard.	
Lower:	Not determined	
Upper: Vapor pressure:	Not determined Not applicable.	
Density:	Not determined	
Relative density Vapor density	Not determined.	
Evaporation rate	Not applicable. Not applicable.	
Solubility in / Miscibility with	not approud to	
Water:	Not determined	
Partition coefficient (n-octanol/water)): Not determined.	
Viscosity:	Not applicable.	
dynamic: kinematic:	Not applicable.	
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

Conditions to avoid No further relevant information available.

Incompatible materials: Oxidizing agents

Hazardous decomposition products: Carbon monoxide and carbon dioxide

11 Toxicological information

Information on toxicological effects

Acute toxicity: No effects known. LD/LC50 values that are relevant for classification: No data

Skin irritation or corrosion: Causes skin irritation.
Eye irritation or corrosion: Causes serious eye irritation.
Sensitization: No sensitizing effects known.
Germ cell mutagenicity: Suspected of causing genetic defects.

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Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity: No effects known.

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

Specific target organ system toxicity - single exposure: May cause respiratory irritation.

Aspiration hazard: No effects known.

Other information (about experimental toxicology):

Mutagenic effects have been observed on tests with bacteria.

Mutagenic effects have been observed on tests with laboratory animals.

Subacute to chronic toxicity:

Subacute to chronic toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:
Nutritional and Gross Metabolic - weight loss or decreased weight gain.
Behavioral - food intake (animal).
Behavioral - fluid intake.

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.
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Additional ecological information:

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

Do not allow undiluted product or large quantities 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

Not a hazardous material for transportation.

Product name: Glyoxal trimer, dihydrate		
		(Contd. of page 3)
UN-Number DOT, IMDG, IATA	None	
UN proper shipping name DOT, IMDG, IATA	None	
Transport hazard class(es)		
DOT, ADR, IMDG, IATA Class	None	
Packing group DOT, IMDG, IATA	None	
Environmental hazards:	Not applicable.	
Special precautions for user	Not applicable.	
Transport in bulk according to Annex II of MARPOL73/	78 and the IBC Code Not applicable.	
Transport/Additional information:	Not dangerous according to the above specifications.	
DOT Marine Pollutant (DOT):	No	

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) Hazard pictograms





GHS07 GHS08

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P281 Use personal protective equipment as required.
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P405 Store locked up.
P501 Dispess of contacts/contains in accordance with the contacts of contacts of contacts/contains in accordance with the contacts of contacts of contacts/contains in accordance with the contacts of contacts of contacts/

Dispose of contents/container in accordance with local/regional/national/international regulations.

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.

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

California Proposition 65

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.
Prop 65 - Developmental toxicity, male Substance is not listed.
Information about limitation of use: For use only by technically qualified individuals.
Other regulations, limitations and prohibitive regulations
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed. market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

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

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.

conformance with this Material Safety Data Sheet, or in conDepartment issuing SDS: Global Marketing Department
Date of preparation / last revision 11/23/2015 / Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
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
VPVB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)

USA