

Safety Data Sheet per OSHA HazCom 2012

1 Identification Product identifier Product name: Diethylene glycol divinyl ether Stock number: L12501 CAS Number: 764-99-8 EC number: 212-133-3 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 Thermo Fisher Scientific Chemicals, Inc. Inerrito Fisher Scheman C. 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) ! GHS07 Skin Irrit. 2 H315 Causes skin irritation. Eye Irrit. 2A H319 Causes serious eye irritation. H227 Combustible liquid. Hazards not otherwise classified No information known. Label elements GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) Hazard pictograms GHS07 Signal word Warning Hazard statements H227 Combustible liquid. H315 Causes skin irritation. H319 Causes serious eye irritation. Precautionary statements P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking. P280 Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P362 Take off contaminated clothing. Store in a well-ventilated place. Keep cool. Dispose of contents/container in accordance with local/regional/national/international regulations. P403+P235 WHMIS classification B3 - Combustible liquid D2B - Toxic material causing other toxic effects Classification system HMIS ratings (scale 0-4) (Hazardous Materials Identification System) 1 Health (acute effects) = 1 2 
 Flammability = 2

 ACTIVITY 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: 764-99-8 Diethylene glycol divinyl ether Identification number(s): EC number: 212-133-3 Additional information: Stabilized with 0.1% potassium hydroxide 4 First-aid measures Description of first aid measures After inhalation Supply fresh air. If required, provide artificial respiration. Keep patient warm.

# Safety Data Sheet per OSHA HazCom 2012

## Product name: Diethylene glycol divinyl ether

Product name: Diethylene glycol div	vinyi etner	
Information for doctor	and rinse thoroughly. r several minutes under running water. Then consult a doctor. ent. <b>s, both acute and delayed</b> No further relevant information available. <b>stention and special treatment needed</b> No further relevant information available.	(Contd. of page 1)
5 Fire-fighting measures Extinguishing media Suitable extinguishing agents Carbon Special hazards arising from the subs If this product is involved in a fire, the fo Carbon monoxide and carbon dioxide Advice for firefighters Protective equipment: Wear self-contained respirator. Wear fully protective impervious suit.	dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. stance or mixture llowing can be released:	
6 Accidental release measures Personal precautions, protective equi Wear protective equipment. Keep unpro Ensure adequate ventilation Environmental precautions: Do not all Methods and material for containmen Prevention of secondary hazards: Ke Reference to other sections See Section 7 for information on safe ha See Section 8 for information on person. See Section 13 for disposal information.	ow material to be released to the environment without proper governmental permits. <b>t and cleaning up</b> : Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, saw ep away from ignition sources. Indling	dust).
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: Keep ignition sources away. 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. Store in the dark. Further information about storage conditions: Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Protect from exposure to light. Specific end use(s) No further relevant information available.		
Specific end use(s) no future 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. Avoid contact with the eyes and skin. Maintain an ergonomically appropriate working environment. Breating 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. Penetration time of glove material (in minutes) Not determined Eye protection: Safety glasses Body protection: Protecting.		
9 Physical and chemical properties Information on basic physical and che General Information Appearance: Form: Color: Odor: Odor threshold: pH-value:		
Change in condition Melting point/Melting range:	-21 °C (-6 °F)	(Contd. on page 3)
		USA —

## Product name: Diethylene glycol divinyl ether

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Ecology pointBolling range: 196-106 °C (386-300 °F) Ecology pointBolling range: 196-106 °C (386-300 °F) Ecology pointBolling range: 146-106 °C (386-300 °F) Ecology pointBolli	Product name: Diethylene glycol div	inyl ether		
Sublimition temperature visit:         Not determined           Parkin politic         Not determined           Auto Statility         Not determined           Durger of explosion:         Product close not present an explosion hazard.           Durger of explosion:         Product close not present an explosion hazard.           Durger of explosion:         Product close not present an explosion hazard.           Durger of explosion:         Product close not present an explosion hazard.           Durger of explosion:         Not determined           Durger of explosion:         Not determined           Durger of explosion:         Not determined.           Weiter:         Not determined.           Subbility and resectivity			(Contd. of page 2)	
Formsholling (solid, gassours)         Not determined description importants           Auto grand; Auto	Boiling point/Boiling range: Sublimation temperature / start:	198-199 °C (388-390 °F) Not determined		
Applicing entropy         Mod determined           Acta (gitting)         Mod determined           Acta (gitting)         Product does not present on explosion hazard.           Entropy of explosion:         Product does not present on explosion hazard.           Entropy of explosion:         Not determined.           Upper:         Not determined.           Pertition conflictent (no-chardwer determined.         Not determined.           Pertition conflictent (no-chardwer determined.         Not determined.           Other information         Not determined.           Other information         Not determined.           Other information         Not determined.           Other information information available.         Not determined.           Other information information available.         Not determined.           11 Toxicological information available.         Not determined.           11 Toxicological information available.         Not determined.           Not determined.         Not determined.           Not determined.         Not determined.	Flash point: Flammability (solid, gaseous)			
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Cover:         Med determined Water press:           Water press:         Med determined Water press:           Press:         Med determined Water press:           Operation rate         Med determined water press:           Press:         Med determined water press:           P	Danger of explosion: Explosion limits:	Product does not present an explosion hazard.		
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Evenous for a te monte de la construcción de la	Relative density	Not determined.		
Public Control of the	Evaporation rate			
Wiscosity:	Water:			
Mineratio:         Mod determined.           10 Stability and reactivity         No date information available.           11 Stability and reactivity         Reactivity No information know.           Reactivity No information know.         Reactivity No information know.           Thermined decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.           Pression of the activity of	Viscosity:			
10 Stability and reactivity Reactivity No information known. Chemical stability Stabile under recommended storage conditions. Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications. Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications. Prossibility of heat dross reactions known Chemical state dross reactions chemical Chemical state dross rea	kinematic:	Not determined.		
Reactivity No information         Insum           Chemical statility Stable under recommended storage conditions.         Thermid steamposition / conditions to be avoided. Decomposition will not occur if used and stored according to specifications.           Conditions to avoid No. Information         Information avoid No. Information           Information on toxicological information         Information           Information on toxicological information.         Information           Information on toxicological information.         Information           Science Toxicological information         Information on toxicological information.           Information on toxicological information.         Information on toxicological information.           Science Toxicological information on toxicological information.         Information on corrosion: Causes skin infation.           Science Toxicological information infation.         Information on corrosion: Causes skin infation.           Garcinogenetify: No Idestify Status Cause Status infation.         Science Status.           Garcinogenetify: No Idestif	Other information	No further relevant information available.		
Reactivity No information         Insum           Chemical statility Stable under recommended storage conditions.         Thermid steamposition / conditions to be avoided. Decomposition will not occur if used and stored according to specifications.           Conditions to avoid No. Information         Information avoid No. Information           Information on toxicological information         Information           Information on toxicological information.         Information           Information on toxicological information.         Information           Science Toxicological information         Information on toxicological information.           Information on toxicological information.         Information on toxicological information.           Science Toxicological information on toxicological information.         Information on corrosion: Causes skin infation.           Science Toxicological information infation.         Information on corrosion: Causes skin infation.           Garcinogenetify: No Idestify Status Cause Status infation.         Science Status.           Garcinogenetify: No Idestif	10 Stability and reactivity			
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Dublicity         Products: Carbon monoxide and carbon dioxide           IT oxicological information         Information on toxicological effects           Acute toxicle; No effects known.         Itoxicological information or consoln: Causes known.           UDLCSO values that are relevant for classification:         Itoxicological information           Skin inritation or corrosion: Causes serious eye irritation.         Series and the series and the series of the seri	Conditions to avoid No further relevant	dangerous reactions known information available.		
Light       Hazardous decomposition products: Carbon monoxide and carbon dioxide         11 Toxicological information       Information on toxicological effects         Note Society In thilds its form.       Information on toxicological effects         Outer Society In thilds its form.       Information on toxicological effects         Outer Society In thilds its form.       Information or cortosion: Causes services were inflation.         Service Integration or cortosion: Causes services were inflation.       Service Integration or cortosion: Causes services were inflation.         Service Integration or cortosion: Causes services were inflation.       Service Integration: No sensitization: No sensitization: Causes services were inflation.         Specific target organ system toxicity - repeated exposure: No effects known.       Aspiration factors in toxicity - repeated exposure: No effects known.         Aspiration Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:       Bazard: No effects whom.         The first of organ system toxicity - repeated exposure: No effects known.       Specific target organ system toxicity - repeated exposure: No effects in laboratory animals:         Brain and Cross Metabolic - uneight loss or decreased weight gain.       Autoritional and Gross Metabolic - weight loss or decreased weight gain.         Autoritional and Gross Metabolic - weight loss or decreased weight gain.       Autoritional and Gross Metabolic - weight loss or decreased weight gain.         Autoritional acological information av	Oxidizing agents			
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Kidney, Ureter, Blädder - other changes.         Behavioral - general anesthetic.         Behavioral - daxia.         Nutritional and Gross Metabolic - weight loss or decreased weight gain.         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:         General notes:         Do not allow material to be released to the environment without proper governmental permits.         Do not allow material to the environment.         Results of PBT and vPVB assessment         PBT: Not applicable.         Other adverse effects No further relevant information available.         VPVB: Not applicable.         Other adverse effects No further relevant information available.         Maste treatment methods         Recommendation: Consult state, local or national regulations to ensure proper disposal.         Uncleaned packagings:         Recommendation: Disposal must be made according to official regulations. <td< th=""><th colspan="3">Brain and Coverings - other degenerative changes.</th></td<>	Brain and Coverings - other degenerative changes.			
Additional and Gross Metabolic - weight loss or decreased weight gam.         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.         Bioaccumulative potential No further relevant information available.         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 undituded 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.	Liver - other changes. Kidney, Ureter, Bladder - other changes.			
Additional and Gross Metabolic - weight loss or decreased weight gam.         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.         Bioaccumulative potential No further relevant information available.         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 undituded 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.	Behavioral - general anesthetic. Behavioral - ataxia.			
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:         General notes:         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.         VPVB: Not applicable.         VPUB: Not applicable.         Uncleaned packagings:         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 <th>Nutritional and Gross Metabolic - weight</th> <th>loss or decreased weight gain.</th> <th></th>	Nutritional and Gross Metabolic - weight	loss or decreased weight gain.		
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:         General notes:         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.         VPVB: Not applicable.         VPUB: Not applicable.      <				
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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.	Do not allow material to be released to the	he environment without proper governmental permits. Juantities to reach ground water, water course or sewage system		
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14 Transport information Not a hazardous material for transportation.	Uncleaned packagings:			
<b>14 Transport information</b> Not a hazardous material for transportation. (Contd. on page 4) USA				
(Contd. on page 4) USA	14 Transport information Not a hazardous material for transportation	on.		
			(Contd. on page 4)	

# Product name: Diethylene glycol divinyl ether

	(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 Signal word Warning Hazard statements H227 Combustible liquid.

H315 Causes skin irritation. H319 Causes serious eye irritation.

Precautionary statements P210 Keep aw P280 Wear pro

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking. P280 Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Take off contaminated clothing. Store in a well-ventilated place. Keep cool. Dispose of contents/container in accordance with local/regional/national/international regulations. P362

P403+P235 P501

National regulations

National regulations All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory. All components of this product are listed on 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, female Substance is not listed. Prop 65 - Developmental toxicity, male 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 an article is according to the REACH regulation (EC) No. 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed. Substance is not liste

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.

#### 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 SDS: Global Marketing Department Date of preparation / last revision 11/23/2015 / -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: International Civil Aviation Organization Organization" (ICAO) IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation

IMDC: International Maritime Code for Dangerous Goods DOT: US Department of Transportation DATA: International Maritime Code for Dangerous Goods DOT: US Department of Transportation 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 USD: Lethal concentration, 50 percent VPWE very Persistent and very Bioaccumulative ACGIH: American Conference of Governmental Industrial Hygienists (USA) OSHA: Occupational Safety and Health Administration (USA) NTP: National Toxicology Program (USA) IARC: International Agency for Research on Cancer EPA: Environmental Protection Agency (USA)

USA