



1 Identification Product identifier Product name: Cyclopentanol Stock number: A15249, L05373 CAS Number: 96-41-3 EC number: 202-504-8 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: Manufacturer/supplier. Alfa Aesar Thermo Fisher Scientific Chemicals, 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 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) * GHS02 Flame Flam. Liq. 3 H226 Flammable liquid and vapour. 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 GHS02 Signal word Warning Hazard statements H226 Flammable liquid and vapour. Precautionary statements P210 P280 P240 P241 P233 P242 Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Wear protective gloves/protective clothing/eye protection/face protection. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Keep container tightly closed. P242 Use only non-sparking tools. P243 Take precautionary measures against static discharge. P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P403+P235 P501 Store in a well-ventilated place. Keep cool. Dispose of contents/container in accordance with local/regional/national/international regulations. WHMIS classification B3 - Combustible liquid * Classification system HMIS ratings (scale 0-4) (Hazardous Materials Identification System)
 HEALTH
 I

 Health (acute effects) = 1

 RRE
 I

 REACTWITY [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: 96-41-3 Cyclopentanol Identification number(s): EC number: 202-504-8 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. (Contd. on page 2)

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(Contd. of page 1)

(Contd. on page 3)

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

Unpleasant Not determined.

Not determined.

-19 °C (-2 °F)

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 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 Ensure adequate ventilation Keep away from ignition sources Environmental precautions: Do not allow product to reach sewage system or any water course. Methods and material for containment and cleaning up: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). 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

8

9

Odor: Odor threshold:

Change in condition Melting point/Melting range:

pH-value:

r 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. 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. 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: The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace. Additional information: No data		
Exposure controls Personal 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. Maintain an ergonomically appropriate working environment. Breathing equipment: Use suitable respirator when high concentrations are present. Recommended filter device for short term use: Use a respirator with multi-purpose combination (US) or type ABEK (EN 14387) as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards such as NIOSH (USA) or CEN (EU). Protection of hands: Impervious gloves Check protective gloves prior to each use for their proper condition. The selection: Safety glasses Body protection: Protective work clothing.		
9 Physical and chemical properties		
Information on basic physical and chemical properties General Information Appearance: Form: Liquid Odor: Unploasant		

Product name: Cyclopentanol

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Boilton point/Boiling range: 138-141 °C (282-388 °F) Sublimation temperature And determined And determined And determined And sprint And determined Sprint The sprint And sprint And determined And sprint And determined Sprint The sprint And sprint And determined Sprint And determined Vapor pressure at 20 °C (6 °F): The sprint And determined And determined Vapor anoration And determined Paratic: Not determined Vapor anoration stop And determined </th <th>Product name: Cyclopentanol</th> <th></th> <th></th>	Product name: Cyclopentanol				
Sublination temperature / start Mod determined Fish point: Fish po			(Contd. of page 2)		
Flaminability (solid, gaseous) Mut determined Compared of explosion: Product is no explosive. However, formation of explosive air/repor mixtures is possible. Durger of explosion: Mut determined Upper in this: Not determined Upper in the solid sectors of the solid sectors of the solid sectors of explosive air/report mixtures is possible. Durger of explosion: Not determined Upper in the solid sectors of the solid sectors of the solid sectors of explosive air/report mixtures is possible. Density at 30 °C (68 °F): Not determined Upper in the solid sectors of the sol	Sublimation temperature / start:	Not determined			
Kinction Respectation:	Flammability (solid, gaseous)	Not determinéd.			
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Explosion limits: Not determined Upper Limit Not determined Variation and the second secon	Auto igniting:	Not determined.			
Lover: More reserved 20 C (68 °F: 10 × 10 × 10 × 10 × 10 × 10 × 10 × 10	Explosion limits:				
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Additional ecological information: General notes: 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. 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. Transport information UN-Number DOT, IMDG, IATA UN2244 UN2244 UN2244 UN2244 UN2244	Persistence and degradability No furth	her relevant information available.			
General notes: Second Seco	Mobility in soil No further relevant infor	rmation available.			
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. 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. Transport information UN-Number DOT, IMDG, IATA UN2244 UN proper shipping name DOT IMDG, IATA Cyclopentanol Cyclopentanol	Additional ecological information: General notes:				
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UN proper shipping name DOT Cyclopentanol IMDG, IATA CYCLOPENTANOL	UN-Number				
DOT Cyclopentanol IMDG, IATA CYCLOPENTANOL	· · · ·	UN2244			
· · · · · · · · · · · · · · · · · · ·	DOT	Cyclopentanol			
		CYCLUPENTANUL	(Contd. on page 4		
			USA -		

	Revision date 10/06/2016			
Product name: Cyclopentanol				
	(Contd. of page 3)			
Transport hazard class(es)				
DOT				
Class	3 Flammable liquids.			
Label	3			
Class Label	3 (F1) Flammable liquids 3			
IMDG, IATA				
Class	3 Flammable liquids.			
Label	3			
Packing group DOT, IMDG, IATA	III			
Environmental hazards:	Not applicable.			
Special precautions for user EMS Number:	Warning: Flammable liquids F-E,S-D			
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Cod				
Transport/Additional information:				
DOT Marine Pollutant (DOT):	Νο			
UN "Model Regulation":	UN2244, Cyclopentanol, 3, III			
15 Regulatory information				
Safety, health and environmental regulations/legislation specific for the s GHS label elements The product is classified and labeled in accordance with	ubstance or mixture 29 CFR 1910 (OSHA HCS)			
Hazard pictograms				
GHS02				
Signal word Warning				
Hazard statements				
H226 Flammable liquid and vapour. Precautionary statements				
P210 Keep away from heat/sparks/open flames/hot surfaces No smoking. P280 Wear protective cloves/orotective clothing/eve protection/face protection				
P240 Ground/bond container and receiving equipment.				
P241 Use explosion-proof electrical/ventilating/lighting/equipment. P233 Keep container tightly closed. P242 Use only non-constructions container tightly closed.				
P242 Use only non-spärking tools. P243 Take precautionary measures against static discharge.				
P243 Take precautionary measures against static discharge. P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P403+P235 Store in a well-ventilated place. Keep cool.				
P501 Dispose of contents/container in accordance with local/regional/national/international 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 Domestic Substances List (DSL).				
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 gualified individuals.				
Other regulations, limitations and prohibitive regulations				
Although this chemical may sometimes be used as a food or drug or cosmetic, our products are not approved or suitable for such use or for human consumption. 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.				
Substance is not listed. Annex XIV of the REACH Regulations (requiring Authorisation for use) Su Chemical safety assessment: A Chemical Safety Assessment has not been a	ibstance is not listed.			
Chemical safety assessment: A Chemical Safety Assessment has not been	carried out.			
16 Other information	an actioned by them, and about dimake independent independent of a vitability of this			
information to ensure proper use and protect the health and safety of employed	on gathered by them, and should make independent judgement of suitability of this es. 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 10/07/2016 / -				
Date of preparation / last revision 10/07/2016 / - 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) 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: Workplace Hazardous Materials Information System (Canada) LCS0: Lethal concentration, 50 percent UNS0: Lethal dose, 50 percent VPUB: very Persistent and very Bioaccumulative ACGIH: American Conference of Governmental Industrial Hygienists (USA) OSHA: Occupational Safety and Health Administration (USA) (Contd. on page 5)				
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: Harardous Materials Indentification 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				
AGGIR: American Conference of Governmental Industrial Hygienists (USA) OSHA: Occupational Safety and Health Administration (USA)	(Contd. on page 5)			
	USAUS			

Product name: Cyclopentanol

NTP: National Toxicology Program (USA) IARC: International Agency for Research on Cancer EPA: Environmental Protection Agency (USA) Flam. Lig. 3: Flammable liquids, Hazard Category 3 Page 5/5 Printing date 10/07/2016 Revision date 10/06/2016

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