

Safety Data Sheet per OSHA HazCom 2012

1 Identification Product identifier Product name: 2,5-Difluorobenzyl alcohol Stock number: L08335 CAS Number: EC number: 278-325-4 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. STOT SE 3 H335 May cause respiratory irritation. 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 H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation. Precautionary statements P261 Avoid breathing dust/fume/gas/mist/vapours/spray. 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. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations. P405 WHMIS classification D2B - Toxic material causing other toxic effects Ţ Classification system HMIS ratings (scale 0-4) (Hazardous Materials Identification System) Health (acute effects) = 1Flammàbility = 1 TIVITY 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: 75853-20-2 2,5-Difluorobenzyl alcohol Identification number(s): EC number: 278-325-4 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)

Flash point:

94 °C (201 °F)

Product name: 2,5-Difluorobenzyl alcohol

(Contd. of page 1) 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 freatment 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 Hydrogen fluoride (HF) Advice for fireficient 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:** 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: 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. 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 The selection of suitable 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: Liauid Colorless Odor: Not determined Odor threshold: Not determined pH-value: Not determined. Change in condition Melting point/Melting range: Boiling point/Boiling range: Sublimation temperature / start: Not determined Not determined Not determined

(Contd. on page 3)

2 5-Diflu ohon w alcohol

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Product name: 2,5-Difluorobenzyl ald	cohol		
		(Contd. of page 2)	
Flammability (solid, gaseous)	Not determined.		
Ignition temperature:	Not determined		
	Not determined Not determined.		
	Product does not present an explosion hazard.		
Explosion limits:			
Upper:	Not determined Not determined		
Vapor pressure:	Not determined		
Relative density	1.29 g/cm³ (10.765 lbs/gal) Not determined.		
Vapor density	Not determined.		
Solubility in / Miscibility with	Not determined.		
	Not determined		
Viscosity:			
dynamic:	Not determined. Not determined.		
	Not determined. No further relevant information available.		
10 Stability and reactivity			
Reactivity No information known.	e e compositione de la composition de la compo	1	
Chemical stability Stable under recomm Thermal decomposition / conditions to	to be avoided: Decomposition will not occur if used and stored according to specifications.		
Possibility of hazardous reactions No	o dangerous reactions known		
Conditions to avoid No further relevant Incompatible materials: Oxidizing agent	information available.		
Hazardous decomposition products:			
Carbon monoxide and carbon dioxide Hydrogen fluoride			
		i	
11 Toxicological information			
Information on toxicological effects Acute toxicity: No effects known.			
LD/LC50 values that are relevant for cl		1	
Skin irritation or corrosion: Causes ski	kin irritation.		
Eye irritation or corrosion: Causes seri Sensitization: No sensitizing effects kno	own.		
Germ cell mutagenicity: No effects know	own.		
Reproductive toxicity: No effects known	on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.		
Specific target organ system toxicity -	Specific target organ system toxicity - repeated exposure: No effects known.		
Specific target organ system toxicity - Aspiration hazard: No effects known.	- single exposure: May cause respiratory irritation.		
Subacute to chronic toxicity: No effects	ts known.		
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 info Persistence and degradability No furthe			
Bioaccumulative potential No further re	relevant information available.		
Mobility in soil No further relevant inform Additional ecological information:	mation available.		
General notes:			
	he environment without proper governmental permits. 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. Other adverse effects No further releval			
Other adverse effects No further relevant	Int information available.		
13 Disposal considerations			
Waste treatment methods			
Recommendation Consult state, local or	or national regulations to ensure proper disposal.		
Uncleaned packagings: Recommendation: Disposal must be ma	unde according to official regulations.		
14 Transport information Not a hazardous material for transportation	·		
Not a hazardous material for transportation UN-Number	<u>on.</u>		
DOT, IMDG, IATA	None		
UN proper shipping name DOT, IMDG, IATA			
	None		
Transport hazard class(es)			
DOT, ADR, IMDG, IATA	Mana		
Class Packing group	None		
Packing group DOT, IMDG, IATA	None		
Environmental hazards:	Not applicable.		
Special precautions for user	Not applicable.		
		(Contd. on page 4)	

USA

Product name: 2,5-Difluorobenzyl alcohol		
	(Contd. of page	
Transport in bulk according to Annex II of MARPOL		
Transport/Additional information: DOT	Not dangerous according to the above specifications.	
Marine Pollutant (DOT):	No	
5 Regulatory information Safety, health and environmental regulations/legisla GHS label elements The product is classified and labe Hazard pictograms GHS07	ation specific for the substance or mixture led in accordance with 29 CFR 1910 (OSHA HCS)	
Signal word Warning Hazard statements H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation. Precautionary statements P261 Avoid breathing dust/fume/gas/mist/ P280 Wear protective gloves/protective cle P305+P351+P338 IF IN EYES: Rinse cautiously with w P304+P340 IF INHALED: Remove person to fres P405 Store locked up. P501 Dispose of contents/container in acc National regulations This product is not listed in the U.S. Environmental Prot to research and development only. This product must be product must not be used for commercial purposes or ir SARA Section 313 (specific toxic chemical listings) California Proposition 65 Prop 65 - Developmental toxicity, substance is not list Prop 65 - Developmental toxicity, female Substance is Information about limitation of use: For use only by t Other regulations, limitations and prohibitive regula Substance of Very High Concern (SVHC) according	othing/eye protection/face protection. rater for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. sh air and keep comfortable for breathing. rordance with local/regional/national/international regulations. tection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted e used by or directly under the supervision of a technically qualified individual as defined by TSCA. This n formulations for commercial purposes. Substance is not listed. ted. is not listed. ted. ted. to the REACH Regulations (EC) No. 1907/2006. Substance is not listed. To the REACH Regulations (EC) No. 1907/2006 (REACH) for the manufacturing, placing on the thorisation for use) Substance is not listed.	
information to ensure proper use and protect the health	ment to other information gathered by them, and should make independent judgement of suitability of this and safety of employees. This information is furnished without warranty, and any use of the product not in combination with any other product or process, is the responsibility of the user.	
Department issuing SDS: Global Marketing Departme Date of preparation / last revision 11/24/2015 / - Abbreviations and acronyms: IMDG: International Maritime Code for Dangerous Goods DOT: US Department of TransportAssociation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substance CAS: Chemical Abstracts Service (division of the American Chemical Soc HMIS: Hazardous Materials Information System (USA) WHMIS: Workplace Hazardous Materials Information System (Canada) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent VPWB: 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)	es iety)	

USHA: Occupational Safety and Health Administratic NTP: National Toxicology Program (USA) IARC: International Agency for Research on Cancer EPA: Environmental Protection Agency (USA)