

Safety Data Sheet per OSHA HazCom 2012

1 Identification Product identifier Product name: 2'-Hydroxypropiophenone Stock number: B25442 CAS Number: 610-99-1 EC number: 210-244-1 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: 610-99-1 2'-Hydroxypropiophenone Identification number(s): EC number: 210-244-1 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)

## Product name: 2'-Hydroxypropiophenone

(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 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: 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 The usual 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 protective gloves prior to each use for their proper condition. 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: Protective work clothing. 9 Physical and chemical properties Information on basic physical and chemical properties **General Information** Appearance: Form: Liauid Color: 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: 15 °C (59 °F) 115 °C (239 °F) (15 mmHg) Not detèrmined Flash point: > 110 °C (> 230 °F)

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Flammability (solid, gaseous)		(Contd. of page 2
Ignition temperature:	Not determined. Not determined	
Decomposition temperature: Auto igniting:	Not determined Not determined	
Danger of explosion:	Product does not present an explosion hazard.	
Explosion limits: Lower:	Not determined	
Upper: Vapor pressure:	Not determined Not determined	
Density at 20 °C (68 °F):	1.094 g/cm <sup>3</sup> (9.129 lbs/gal)	
Relative density Vapor density	Not determined.	
Evaporation rate Solubility in / Miscibility with	Not determined.	
Water: Partition coefficient (n-octanol/water):	Not miscible or difficult to mix	
Viscosity:		
	Not determined. Not determined.	
Other information	No further relevant information available.	
0 Stability and reactivity		
Reactivity No information known		
Chemical stability Stable under recomm Thermal decomposition / conditions to	o be avoided: Decomposition will not occur if used and stored according to specifications.	
Possibility of hazardous reactions No Conditions to avoid No further relevant	dangerous reactions known	
Incompatible materials: Oxidizing agen Hazardous decomposition products: O	nts	
1 Toxicological information		
Information on toxicological effects Acute toxicity: No effects known.		
LD/LC50 values that are relevant for cl Skin irritation or corrosion: Causes ski		
Eve irritation or corrosion: Causes ser	ious eve irritation.	
Sensitization: No sensitizing effects kno Germ cell mutagenicity: No effects kno	own.	
Carcinogenicity: No classification data of Reproductive toxicity: No effects known	on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.	
<ul> <li>Specific target organ system toxicity -</li> </ul>	- repeated exposure: No effects known.	
Aspiration hazard: No effects known.	- single exposure: May cause respiratory irritation.	
Subacute to chronic toxicity: No effect. Additional toxicological information: 7	ts known. To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.	
2 Ecological information		
Toxicity		
Aquatic toxicity: No further relevant info	ormation available.	
Persistence and degradability No further re Bioaccumulative potential No further re	el relevant information available.	
Mobility in soil No further relevant inform Additional ecological information:	nation available.	
General notes:	to any ironment without proper gevernmental permite	
Avoid transfer into the environment.	he environment without proper governmental permits.	
Results of PBT and vPvB assessment PBT: Not applicable.		
vPvB: Not applicable.	nt information available.	
Other adverse effects No further relevant		
Other adverse effects No further releval		
3 Disposal considerations		
3 Disposal considerations Waste treatment methods Recommendation Consult state, local o	r national regulations to ensure proper disposal.	
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13 Disposal considerations Waste treatment methods Recommendation Consult state, local of Uncleaned packagings: Recommendation: Disposal must be ma 14 Transport information Not a hazardous material for transportation UN-Number DOT, IMDG, IATA UN proper shipping name DOT, IMDG, IATA	ade according to official regulations.	
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Product name: 2'-Hydroxypropiophenone (Contd. of page		
Transport/Additional information:	Not dangerous according to the above specifications.	
DOT Marine Pollutant (DOT):	No	
5 Regulatory information Safety, health and environmental regulations/legislan GHS label elements The product is classified and labele Hazard pictograms	<b>tion specific for the substance or mixture</b> ed in accordance with 29 CFR 1910 (OSHA HCS)	
P405 Store locked up. P501 Dispose of contents/container in acco National regulations This product is not listed in the U.S. Environmental Protect to research and development only. This product must be product must not be used for commercial purposes or in SARA Section 313 (specific toxic chemical listings) S California Proposition 65 Prop 65 - Chemicals known to cause cancer Substance Prop 65 - Developmental toxicity Substance is not lister Prop 65 - Developmental toxicity, female Substance is r Information about limitation of use: For use only by te Other regulations, limitations and prohibitive regulat Substance of Very High Concern (SVHC) according t	Substance is not listed. ce is not listed. ed. s not listed. pot listed. pot listed. cons to the REACH Regulations (EC) No. 1907/2006. Substance is not listed. T and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the horisation for use) Substance is not listed.	
information to ensure proper use and protect the health a	nent 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 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 Substance. CAS: Chemical Abstracts Service (division of the American Chemical Socie HMIS: Hazardous Materials Identification System (USA) WHMIS: Workplace Hazardous Materials Information System (Canada) LC50: Lethal concentration, 50 percent US0: Lethal concentration, 50 percent VPGB: 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: Intermational Agency for Research on Cancer EPA: Environmental Protection Agency (USA)		