



(Contd. on page 2) USA

1 Identification Product identifier Product name: 3-Chloropropiophenone Stock number: L02296 **CAS Number:** 936-59-4 EC number: 213-317-6 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) The substance is not classified according to the Globally Harmonized System (GHS). Hazards not otherwise classified No information known. I abel elements GHS label elements Not applicable Hazard pictograms Not applicable Signal word Not applicable Hazard statements Not applicable WHMIS classification Not controlled Classification system HMIS ratings (scale 0-4) (Hazardous Materials Identification System) Health (acute effects) = 1 Flammability = 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: 936-59-4 3-Chloropropiophenone Identification number(s): EC number: 213-317-6 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 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 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: Tarbon monoxide and carbon dioxide Hydrogen chloride (HCl) 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: Pick up mechanically.

| Product name: 3-Chloropropiophen | one | | |
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| | | (Contd. of page 1) | |
| 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 person See Section 13 for disposal information. | al protection equipment. | | |
| 7 Handling and storage | | | |
| Handling | | | |
| Precautions for safe handling | Precautions for safe handling | | |
| Keep container tightly sealed. Store in cool, dry place in tightly closed containers. | | | |
| 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. | | | |
| Store in cool, dry conditions in well sealed containers. Specific end use(s) No further relevant information available. | | | |
| Specific end use(s) No futurel relevant | | | |
| 8 Exposure controls/personal prote | | | |
| Additional information about design of technical systems: Property operating chemical turns have designed for bazardous chemicals and having an average face velocity of at least 100 feet per minute | | | |
| 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 rec | quire monitoring at the workplace: Not required. | | |
| Addítional 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 clo | thing immediately. | | |
| Wash hands before breaks and at the el Maintain an ergonomically appropriate w | nd of work. vorking environment | | |
| Breathing equipment: Use suitable res | 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. | | | |
| 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 clothi | ing. | | |
| 9 Physical and chemical properties | | | |
| Information on basic physical and chemical properties | | | |
| General Information Appearance: | | | |
| Form: | Powder | | |
| Color: Odor: | Tan Not determined | | |
| Odor threshold: | Not determined. | | |
| pH-value: | Not applicable. | | |
| Change in condition Melting point/Melting range: | 48-50 °C (118-122 °F) | | |
| Boiling point/Boiling range: | Not determined | | |
| Sublimation temperature / start: | Not determined | | |
| Flash point: Flammability (solid, gaseous) | > 110 °C (> 230 °F) Not determined. | | |
| Ignition temperature: Decomposition temperature: | Not determined | | |
| Auto igniting: | Not determined Not determined. | | |
| Danger of explosion: Explosion limits: | Product does not present an explosion hazard. | | |
| Lower: | Not determined | | |
| Upper: Vapor pressure: | Not determined | | |
| Density: | Not applicable. Not determined | | |
| Relative density Vapor density | Not determined. Not applicable. | | |
| Evaporation rate | Not applicable. | | |
| Solubility in / Miscibility with Water: | Not determined | | |
| Partition coefficient (n-octanol/water) | | | |
| Viscosity: dynamic: | Not applicable. | | |
| kinematic: | Not applicable. | | |
| Other information | No further relevant information available. | | |
| 10 Stability and reactivity | | | |

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

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| Product name: 3-Chloropropiophenone | | |
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| Hazardous decomposition products: Carbon monoxide and carbon dioxide Hydrogen chloride (HCI) | | (Contd. of page 2) |
| 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: May cause irritation Eye irritation or corrosion: May cause irritation Sensitization: No sensitizing effects known. Germ cell mutagenicity: No effects known. Carcinogenicity: No effects known. Carcinogenicity: No effects known. Specific target organ system toxicity - repeated exposure: No effects known. Aspiration hazard: No effects known. Subacute to chronic toxicity: No effects known. Subacute to chronic toxicity: No effects known. Additional toxicological information: To the best of our knowledge the acut | wn. I. | |
| 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 govern Do not allow undiluted product or large quantities to reach ground water, wate Avoid transfer into the environment. Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable. | nmental permits. ar course or sewage system. | |
| Other adverse effects No further relevant information available. | | |
| 13 Disposal considerations Waste treatment methods Recommendation Consult state, local or national regulations to ensure prope Uncleaned packagings: Recommendation: Disposal must be made according to official regulations. | ər disposal. | |
| 14 Transport information Not a hazardous material for transportation. | | |
| 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 Co | | |
| 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 s GHS label elements Not applicable Hazard pictograms Not applicable Hazard statements Not applicable National regulations All components of this product are listed in the U.S. Environmental Protection All components of this product are listed on the Canadian Non-Domestic Subs 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, 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 ind Other regulations | Agency Toxic Substances Control Act Chemical substance Inventor stances List (NDSL). d. | γ. |

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

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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.

conformance with this Material Safety' Data Sheet, or in combination w 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 ITAL: International Maritime Code for Dangerous Goods DOT: US Department of 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 concentration, 50 percent LD50: Lethal concentration, 50 percent LD50: Lethal concentration and Very Bioaccumulative ACGIH: American Conference of Governmental Industrial Hygienists (USA) OSHA: Occupational Safety and Health Administration (USA) MTP: National Toxicology Program (USA) IARC: International Agency for Research on Cancer EPA: Environmental Protection Agency (USA)