



1 Identification
Product identifier Product name: Tin phosphide
Stock number: 12827
CAS Number: 25324-56-5
EC number:
246-848-7 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. 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)
GHS06 Skull and crossbones
Acute Tox. 3 H301 Toxic if swallowed. Acute Tox. 3 H331 Toxic if inhaled.
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
GHS06
Signal word Danger Hazard statements
H301+H331 Toxic if swallowed or if inhaled.
Precautionary statements P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P301 P2101 P2101 P2101 P2101 P2101 P2100 P2101 P210
P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/ P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P311 Call a POISON CENTER/doctor/
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations. WHMIS classification D14 Venturin metericle environmendiate and environe texin effects
D1A - Very toxic material causing immediate and serious toxic effects
Classification system
HMIS ratings (scale 0-4) (Hazardous Materials Identification System)
HEALTH \blacksquare Health (acute effects) = 3
FIRE Image: Physical Hazard = 2
Other hazards Results of PBT and vPvB assessment
PBT: Not applicable. vPvB: Not applicable.
3 Composition/information on ingredients Chemical characterization: Substances
CAS# Description: 25324-56-5 Tin phosphide
Identification number(s): EC number: 246-848-7
4 First-aid measures
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 swallowing Seek medical treatment.
(Contd. on page 2) USA

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(Contd. of page 1) 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** CO2, sand, extinguishing powder. Do not use water. **Special hazards arising from the substance or mixture** If this product is involved in a fire, the following can be released: Metal oxide fume Hydrogen phosphide (Phosphine) Phosphorus oxides 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 Mount respiratory protective device. 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: Dispose of contaminated material as waste according to section 13. 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: May react with water or acids to produce phosphine gas which is toxic and flammable. 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: Do not store together with acids. 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: Tin metal, oxide and inorganic compounds, except tin hydride, as Sn mg/m3 2 ACGIH TLV 2 2 2 Austria MAK Belgium TWA Denmark TWA Finland TWA 2 2

Germany MAK Hungary TWA Korea TLV 2 1; 2-STEL (skin) 2 Netherlands MAC-TGG 2 Nemenanus MAC-TGG 2 Norway TWA 1 Poland TWA 2 Switzerland MAK-W 2; 4-KZG-W United Kingdom TWA 2; 4-STEL USA PEL 2 Additional 2 Additional information: No data

Exposure controls 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 solied and contaminated clothing immediately. Wash hands before breaks and at the end of work. Meintein an organomically conception working convironment Maintain an ergonomically appropriate working environment. Breathing 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. **Eye protection:** Safety glasses

Body protection: Protective work clothing.

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(Contd. of page 2)

9 Physical and chemical properties 10 Physical and chemical properties Chemisterion material properties Control Control Other the same physical and chemical properties Control Control Other the same physical and chemical properties Control Control Difference physical properties Physical properties Control		(Conta. of page 2)		
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dynamic: brown mormation Not applicable: No further relevant information available: No further relevant information available: 10 Stability and reactivity Reactivity Coning: with acids liberates very taxic gas: conditions: Thermal decomposition / conditions to be availed? Decomposition will not occur if used and stored according to specifications: Possibility of hazardous reactions May react with water or acids to produce phosphine gas which is toxic and flammable. Conditions to be availed to internation available: Incompatible materials: Acids Hazardous decomposition / conditions to be available. Incompatible materials: Acids Hazardous decomposition products: Hazardous decomposition de la conscience in the text of the state in the sale and mucous membranes. Sim initiation or corrosion: Initiant to sale and mucous membranes. Sim initiation or corrosion: Initiant to sale and mucous membranes. Sim initiation or corrosion: Initiant to sale and mucous membranes. Sim initiation in toxicological effects known. Specific target organ system toxicity - repeated exposure: No effects known. Specific target organ system toxicity - repeated exposure: No effects known. Specific target organ system toxicity - repeated exposure: No effects known. Specific target organ system toxicity - repeated exposure: No effects known. Subscute to chronic toxicity: No effects function: Thromal decomponds are poorly absorbed by the body when ingested or inhalad. Inor	Viscosity:	: Not determined.		
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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.	Information on toxicological effects Acute toxicity: Harmful if inhaled. Harmful if swallowed. LD/LC50 values that are relevant for c Skin irritation or corrosion: Irritant to s Eye irritation or corrosion: Irritating eff Sensitization: No sensitizing effects kno Germ cell mutagenicity: No effects kno Carcinogenicity: No classification data Reproductive toxicity: No effects known. Specific target organ system toxicity Specific target organ system toxicity Aspiration hazard: No effects known. Subacute to chronic toxicity: Tin metal dust/fumes and inorganic tin c absorbed by the body when ingested or Inorganic phosphorus compounds may c especially the jaw and teeth. Subacute to chronic toxicity: Phosphine, if generated, is a very toxic, convulsions leading to death within 48 h	skin and mucous membranes. fect. own. own. on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH. <i>- repeated exposure:</i> No effects known. <i>- repeated exposure:</i> No effects known. <i>- single exposure:</i> No effects are central nervous system depression and lung irritation. Inhalation can cause coma and ours.		
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.	12 Ecological information			
	Toxicity Aquatic toxicity: No further relevant info Persistence and degradability No furth Bioaccumulative potential No further n Mobility in soil No further relevant infor Additional ecological information: General notes: Do not allow material to be released to ti Do not allow undiluted product or large of Avoid transfer into the environment. Results of PBT and vPvB assessment PBT: Not applicable.	her relevant information available. elevant information available. mation available. he environment without proper governmental permits. quantities to reach ground water, water course or sewage system.		

per OSHA HazCom 2012	Printing date 11/24/2015 Reviewed on 02/10/2006
Product name: Tin phosphide	
Other adverse effects No further relevant information availab	(Contd. of page 3)
13 Disposal considerations Waste treatment methods Recommendation Consult state, local or national regulations Uncleaned packagings: Recommendation: Disposal must be made according to offic	
14 Transport information	
UN-Number DOT, IMDG, IATA	UN3288
UN proper shipping name DOT IMDG, IATA	Toxic solid, inorganic, n.o.s. (Tin phosphide) TOXIC SOLID, INORGANIC, N.O.S. (Tin phosphide)
Transport hazard class(es) DOT	
Class Label Class Label IMDG, IATA	6.1 Toxic substances. 6.1 6.1 (T5) Toxic substances 6.1
Class Label	6.1 Toxic substances. 6.1
Packing group DOT, IMDG, IATA	11
Environmental hazards: Special precautions for user	Not applicable. Warning: Toxic substances
Transport in bulk according to Annex II of MARPOL73/78	9
Transport/Additional information:	
DOT Marine Pollutant (DOT):	No
UN "Model Regulation":	UN3288, Toxic solid, inorganic, n.o.s. (Tin phosphide), 6.1, II
15 Regulatory information Safety, health and environmental regulations/legislation s GHS label elements The product is classified and labeled in a Hazard pictograms GHS06	s pecific for the substance or mixture accordance with 29 CFR 1910 (OSHA HCS)
SARA Section 313 (specific toxic chemical listings) Substa California Proposition 65 Prop 65 - Chemicals known to cause cancer Substance is I Prop 65 - Developmental toxicity Substance is not listed. Prop 65 - Developmental toxicity, female Substance is not I Prop 65 - Developmental toxicity, male Substance is not Is Information about limitation of use: For use only by technic	ep comfortable for breathing. In local/regional/national/international regulations. Inental Protection Agency Toxic Substances Control Act Chemical substance Inventory. Inot listed. Inot listed. Ited. Ited. Ited. Inaction Second Sec
information to ensure proper use and protect the health and sa	to other information gathered by them, and should make independent judgement of suitability of this afety of employees. This information is furnished without warranty, and any use of the product not in ination with any other product or process, is the responsibility of the user.

Product name: Tin phosphide	
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: Hazardous Materials Information System (Canada) LCS0: Lethal concentration, 50 percent DDS0: Lethal dose, 50 percent LDS0: Lethal dose, 50 percent ACGIH: American Conference of Governmental Industrial Hygienists (USA) OSH4: Occupational Safety and Health Administration (USA) NTP: National Toxicology Program (USA) INTP: National Toxicology Program (USA)	(Contd. of page 4)