

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME Dr. Werner Freyberg, Chemische Fabrik		EMERGENCY TELEPHONE NO. RPC 913-825-2181 Germany 06201/7676
Distributor: Research Products Company		
ADDRESS (Number, Street, City, State, and ZIP Code) 6941 Laudenbach, P.O. Box 9+10, Federal Republic of Germany/P.O. Box 1057, Salina, KS		
CHEMICAL NAME AND SYNONYMS Aluminum Phosphide	TRADE NAME AND SYNONYMS Detia Gas Ex-B	
CHEMICAL FAMILY Phosphide	FORMULA AlP	

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE Not Applicable			METALLIC COATINGS Not Applicable		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)
Aluminum Phosphide (Phosphine)				57	.3ppm
Urea releases small quantities of ammonia					

SECTION III - PHYSICAL DATA

BOILING POINT (°F.) of Phosphine	-87.7°C	SPECIFIC GRAVITY (H ₂ O=1) of aluminum phosphide	2.42 g/cm ³
VAPOR PRESSURE (mm Hg.) of Phosphine at 68°F	33.5 at.	PERCENT VOLATILE OF aluminum phosphide in air it reacts to produce PH ₃	
VAPOR DENSITY (AIR=1) of phosphine	1.17	EVAPORATION RATE (_____=1)	Not liquid at normal temp.
SOLUBILITY IN WATER	Forms Phosphine Gas When Contacted by water		
APPEARANCE AND ODOR	Phosphine: Smells like carbide (Garlic), colorless gas Aluminum Phosphide: Gray-Green solid		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) 212°F at 1.8% (18,000ppm) concentration	FLAMMABLE LIMITS 1.8% (without flame)	Lel	Uel
EXTINGUISHING MEDIA Sand			
SPECIAL FIRE FIGHTING PROCEDURES Do not use water.			
UNUSUAL FIRE AND EXPLOSION HAZARDS Detia Gas Ex-B fumigant powder is non-combustible itself, but exposure to moist air or water releases flammable and toxic phosphine gas. Spontaneous ignition may result if contacted by water, acids, or chemicals. Follow labeling instructions.			

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SECTION V - HEALTH HAZARD DATA	
THRESHOLD LIMIT VALUE	TLV value for Phosphine 0.3ppm
EFFECTS OF OVEREXPOSURE	Sensation of cold, diarrhea, vomiting, dizziness, dry cough, loss of appetite, intense thirst, acute indigestion, gastric pains, enlarged pupils, choking attacks, reeling.
EMERGENCY AND FIRST AID PROCEDURES	Take victim to fresh air and call doctor, keep warm, supply patient with pure oxygen and maintain respiration.

SECTION VI - REACTIVITY DATA			
STABILITY	UNSTABLE		CONDITIONS TO AVOID Very stable until seal is broken in containers. Once seal is broken must use all product in container.
	STABLE	X	
INCOMPATIBILITY (Materials to avoid) Keep away from moisture. Phosphine gas corrodes copper, brass, gold and other precious metals.			
HAZARDOUS DECOMPOSITION PRODUCTS When contacted by water or moisture in air, it forms Phosphine Gas.			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES	
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	
Handle as described for partially spent bags.	
WASTE DISPOSAL METHOD Spent bags must be disposed in an approved burial site (varies by states) or in approved pesticide incinerator for burning.	
Spent bags or partially spent bags may be stored in 55 gallon drum (as described in labeling) prior to disposal. Partially spent bags must be expended prior to disposal.	

SECTION VIII - SPECIAL PROTECTION INFORMATION		
RESPIRATORY PROTECTION (Specify type) Full-face mask, an approved canister for Phosphine MSA Gas Mask canister type GMC-SS-1 Part No. 77713 should be at least immediately available.		
VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General)	OTHER
PROTECTIVE GLOVES	EYE PROTECTION	
Not necessary.	None	
OTHER PROTECTIVE EQUIPMENT Gas masks normally not needed because of delayed release of PH_3 . They are recommended when mixing residual powder in water-surfactant solution, Drager Gas Detector tubes can be used to monitor gas concentrations.		

SECTION IX - SPECIAL PRECAUTIONS	
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	
Store the tins in a dry, cool place out of reach of children and irresponsible persons. Once a tin is opened all bags in that tin must be used. Water and other liquid must not contact the bags.	
OTHER PRECAUTIONS	
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