

Product Name **ARSINE**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name **COREGAS PTY LTD**
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Synonym(s) 30831010 - MSDS NUMBER

Use(s) INDUSTRIAL APPLICATIONS
MSDS Date 25 Nov 2008

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO ASCC CRITERIA

RISK PHRASES

R12 Extremely Flammable.
R26 Very toxic by inhalation.
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SAFETY PHRASES

S1/2 Keep locked up and out of reach of children.
S16 Keep away from sources of ignition - No smoking.
S28 After contact with skin, wash immediately with plenty of water.
S33 Take precautionary measures against static discharges.
S36/37 Wear suitable protective clothing and gloves.
S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).
S60 This material and its container must be disposed of as hazardous waste.
S61 Avoid release to the environment. Refer to special instructions / safety data sheets.
S9 Keep container in a well ventilated place.

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN No.	2188	DG Class	2.3	Subsidiary Risk(s)	2.1
Packing Group	None Allocated	Hazchem Code	2PE	EPG	2B2

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Formula	CAS No.	Content
ARSINE	As-H3	7784-42-1	100%

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4. FIRST AID MEASURES

Eye	If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poison Information Centre or a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Be aware of possible explosive atmospheres. Apply artificial respiration if not breathing. Give oxygen if available.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.
Ingestion	For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Due to product form and application, ingestion is considered unlikely.
Advice to Doctor	Basic life support measures. Treatment is aimed at haemolysis and acute tubular necrosis. Total replacement blood transfusion may be indicated, and prolonged artificial dialysis may also be helpful. BAL may be helpful. Dosage is 2.5 mg/kg body weight, repeated four to six times the first two days and reduced to twice daily for up to ten days.

5. FIRE FIGHTING MEASURES

Flammability	Highly flammable. May evolve arsenic and hydrogen when heated to decomposition. Keep ignition sources away from piping, storage and usage areas. Cylinders and manifolds should be located in areas with good natural ventilation. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, mobile phones etc. when handling.
Fire and Explosion	Highly flammable. Temperatures in a fire may cause cylinders to rupture. Decomposes to arsenic and hydrogen at 230 degrees C. Escaping gas and liquid will add fuel to a fire and other reactions may occur. Call fire brigade.
Extinguishing	Stop flow of gas if safe to do so, such as by slowly closing the cylinder valve.
Hazchem Code	2PE

6. ACCIDENTAL RELEASE MEASURES

Spillage	If the cylinder is leaking, eliminate all potential ignition sources and evacuate area of personnel. Inform manufacturer/supplier of leak. Wear appropriate PPE and carefully move it to a well ventilated remote area, then allow to discharge. Do not attempt to repair leaking valve or cylinder safety devices.
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7. STORAGE AND HANDLING

Storage	Do not store near sources of ignition or incompatible materials. Cylinders should be stored below 45°C in a secure area, upright and restrained to prevent cylinders from falling. Cylinders should also be stored in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits.
Handling	Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

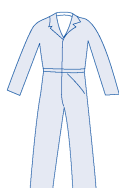
8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Exposure Stds	Ingredient	Reference	TWA		STEL	
			ppm	mg/m3	ppm	mg/m3
	Arsine	ASCC (AUS)	0.05	0.16	--	--

Biological Limits No biological limit allocated.

Engineering Controls Maintain adequate ventilation. Confined areas (eg. tanks) should be adequately ventilated or gas tested. Maintain vapour levels below the recommended exposure standard.

PPE Wear leather gloves, leather or safety boots, impervious coveralls and self Contained Breathing Apparatus (SCBA) or an Air-line respirator.



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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	COLOURLESS GAS	Solubility (Water)	NOT AVAILABLE
Odour	GARLIC ODOUR	Specific Gravity	NOT AVAILABLE
pH	NOT AVAILABLE	% Volatiles	NOT AVAILABLE
Vapour Pressure	NOT AVAILABLE	Flammability	HIGHLY FLAMMABLE
Vapour Density	NOT AVAILABLE	Flash Point	< 0°C
Boiling Point	NOT AVAILABLE	Upper Explosion Limit	NOT AVAILABLE
Melting Point	NOT AVAILABLE	Lower Explosion Limit	NOT AVAILABLE
Evaporation Rate	NOT AVAILABLE		

10. STABILITY AND REACTIVITY

Material to Avoid Incompatible with oxidising agents (eg. hypochlorites, peroxides), combustible materials, heat and ignition sources.

Decomposition May evolve arsenic and hydrogen when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary Moderately to Highly toxic. Almost all toxic effects can be explained by haemolysis, that is, attack on the red blood cells. Damaging effects also occur in the heart, liver, and kidneys. Bone marrow depression and peripheral neuropathy have been reported in more severe cases and may develop months after poisoning. Arsenic and arsenic compounds are classified as carcinogenic to humans (IARC Group 1).

Eye Irritant vapour. Low temperature evaporating liquid can cause cold burns.

Inhalation Moderate to high toxicity. Onset of symptoms ranges from 20 minutes to 36 hours depending on concentration inhaled. Symptoms include general malaise, headache, nausea, vomiting, tightness in the chest and pain in the abdomen and loins. Urine will usually become red or darkened in colouration and skin will take on a bronze or jaundiced colouration. Tingling of the face and extremities may also occur. Respiration and pulse may become more rapid. Inhalation of 25 to 50 vppm for half an hour will be lethal. Concentrations of 250 vppm are instantly fatal.

Skin Irritating vapour. Low temperature evaporating liquid can cause cold burns.

Ingestion Ingestion is considered unlikely due to product form. However, ingestion of liquid may result in burns to the mouth and throat.

Toxicity Data ARSINE (7784-42-1)
Carcinogenicity: Confirmed human carcinogen (IARC Group 1)
LC50 (Inhalation): 250 mg/m³/10 minutes (mouse)
LCLo (Inhalation): 25 ppm/30 minutes (human)
TCLo (Inhalation): 3 ppm (human)

12. ECOLOGICAL INFORMATION

Environment Limited ecotoxicity data was available for this product at the time this report was prepared. Ensure appropriate measures are taken to prevent this product from entering the environment.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Cylinders should be returned to the manufacturer or supplier for disposal of contents.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION



PRODUCT NAME **ARSINE**

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

Shipping Name	ARSINE				
UN No.	2188	DG Class	2.3	Subsidiary Risk(s)	2.1
Packing Group	None Allocated	Hazchem Code	2PE	EPG	2B2

IATA

Shipping Name	ARSINE				
UN No.	2188	DG Class	2.3	Subsidiary Risk(s)	2.1
Packing Group	None Allocated				

IMDG

Shipping Name	ARSINE				
UN No.	2188	DG Class	2.3	Subsidiary Risk(s)	2.1
Packing Group	None Allocated				

15. REGULATORY INFORMATION

Poison Schedule Classified as a Schedule 7 (S7) Poison using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

AICS All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Additional Information APPLICATION METHOD: Gas regulator of suitable pressure and flow rating fitted to cylinder or manifold with low pressure gas distribution to equipment.

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

ABBREVIATIONS:

ADB - Air-Dry Basis.

BEI - Biological Exposure Indice(s)

CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.

CNS - Central Nervous System.

EINECS - European INventory of Existing Commercial chemical Substances.

IARC - International Agency for Research on Cancer.

M - moles per litre, a unit of concentration.

mg/m3 - Milligrams per cubic metre.

NOS - Not Otherwise Specified.

NTP - National Toxicology Program.

OSHA - Occupational Safety and Health Administration.

pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).

ppm - Parts Per Million.

RTECS - Registry of Toxic Effects of Chemical Substances.

TWA/ES - Time Weighted Average or Exposure Standard.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

Report Status This document has been compiled by RMT on behalf of the manufacturer of the product and serves as the manufacturer's Material Safety Data Sheet ('MSDS').

PRODUCT NAME ARSINE

It is based on information concerning the product which has been provided to RMT by the manufacturer or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer.

While RMT has taken all due care to include accurate and up-to-date information in this MSDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this MSDS.

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End of Report