

MATERIAL SAFETY DATA SHEET

Section I : Chemical Product and Company Identification

Chemical Name	Volatile Corrosion Inhibitor
Supplier	OKEL RESEARCH LABORATORIES No. 9, Jalan SB Jaya 3, Taman Industri SB Jaya, 47000 Sungai Buloh, Selangor Handphone number: 016-322 6921
Chemical Formula	Proprietary

Section II: Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Proprietary	N/A	Min. 97.0 (T)	This chemical is classified as a possible carcinogen. There is no acceptable exposure limit for a carcinogen.	Rat LD ₅₀ (oral) 330mg/kg Mouse LD ₅₀ (subcutaneous) 155mg/kg Mouse LD ₅₀ (oral) 80mg/kg

Section III: Hazards Identification

Acute Health Effects Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Causes cyanosis. May cause nervous system disturbances. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Chronic Health Effects CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Tumorigenic: rat (subcutaneous) 2400mg/kg/48 weeks intermittent.
Tumorigenic – Equivocal tumorigenic by RTECS criteria.
Mouse (subcutaneous) 2040mg/kg/52 weeks intermittent.
Tumorigenic – Equivocal tumorigenic by RTECS criteria.
DEVELOPMENTAL TOXICITY: Not available.
Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section IV: First Aid Measures

Eye Contact	Check for and remove any contact lenses. DO NOT use an eye ointment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention. Treat symptomatically and supportively.
Skin Contact	After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. Seek medical attention. Treat symptomatically and supportively. Wash any contaminated clothing before reusing.
Inhalation	If the victim is not breathing, perform artificial respiration. Loosen tight clothing such as collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention. Treat symptomatically and supportively.
Ingestion	INDUCE VOMITTING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as collar, tie, belt, or waistband. If the victim is not breathing, administer artificial respiration. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively.



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Section V: Fire and Explosion Data

Flammability	Flammable	Auto-Ignition	Not Available
Flash Points	Not Available	Flammable Limits	Not Available
Combustion Products	These products are toxic carbon oxides (CO, CO ₂) and nitrogen oxides (NO, NO ₂).		
Fire Hazards	Reactive with strong oxidizers. Vapours may travel to source of ignition and flash back. Closed containers may explode from heat of a fire. Highly flammable in presence of open flames and sparks of heat.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. No additional information is available regarding the risks of explosion.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO ₂ , water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.		

Section VI: Accidental Release Measures

Spill Cleanup Instructions	Flammable solid. Toxic material. Possible carcinogenic material. Irritating material. Refrigerate material. Stop leak if without risk. DO NOT touch spilled material. Use water spray curtain to divert vapour drift. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal.
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Section VII: Handling and Storage

Handling and Storage Information	FLAMMABLE. TOXIC. POSSIBLE CARCINOGEN. IRRITANT. REFRIGERATE. Handle with caution and minimize exposure. DO NOT ingest. DO NOT breathe dust. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Avoid contact with skin and eyes.
Vapour Pressure	Always store away from incompatible compounds such as oxidizing agents. Reactive with strong oxidizers; may be ignited by heat, sparks or flames. Vapours may travel to source of ignition and flash back. Closed containers may explode from heat of a fire. Empty containers may pose a fire risk. Evaporate residue under a fume hood if possible. Ground all equipment containing material. Handle with caution and minimize exposure. Keep away from heat and sources of ignition. Tightly seal container and store in a cool, dry place. Use only non-sparking hand tool when handling this product.

Section VIII: Exposure Controls / Personal Protection

Engineering Controls	Uses process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	This chemical is classified as a possible carcinogen. There is no acceptable exposure limit for a carcinogen.

Section IX: Physical and Chemical Properties

Physical State @ 20°C	Off-White Powder	Solubility	36gm/lit
Specific Gravity	Not Available	Partition Coefficient	Not Available
Molecular Weight	Not Available	Vapour Pressure	3.3 mm Hg @ 25°C
Boiling Point	Not Available	Vapour Density	Not Available
Melting Point	82 to 183°C (359.6 to 361.4°F) (Decomp)	Volatility	Not Available
Refractive Index	Not Available	Odour	Not Available
Viscosity	Not Available	Taste	Not Available
Critical Temperature	Not Available		



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Section X: Stability and Reactivity Data

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light.
Incompatibilities	Reactive with strong oxidizing agents.

Section XI: Toxicological Information

RTECS Number	HY4200000
Routes of Exposure	Eye contact. Inhalation. Ingestion. Skin contact.
Toxicity Data	Rat LD ₅₀ (oral) 330mg/kg Mouse LD ₅₀ (subcutaneous) 155mg/kg Mouse LD ₅₀ (oral) 80mg/kg
Chronic Toxic Effects	CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Tumorigenic: rat (subcutaneous) 2400mg/kg/48 weeks intermittent. Tumorigenic – Equivocal tumorigenic by RTECS criteria. Mouse (subcutaneous) 2040mg/kg/52 weeks intermittent. Tumorigenic – Equivocal tumorigenic by RTECS criteria. DEVELOPMENTAL TOXICITY: Not available. Repeated exposure to highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
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Section XII: Ecological Information

Ecotoxicity	Not Available
Environmental Fate	Not Available

Section XIII: Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local or regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state, and local regulations when disposing of this substance.
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Section XIV: Transport Information

DOT Classification	DOT CLASS 4.1: Flammable solid.
Packing Group (PG)	III

Section XV: Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is ON the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	Not Available
EINECS Number (EEC)	221-515-9
EEC Risk Statements	R10 – Flammable. R18 – In use, may form flammable/explosive vapour-air mixture. R23/24/25 – Toxic by inhalation, in contact with skin and if swallowed. R36/37/38 – Irritating to eyes, respiratory system and skin.



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