Material Safety Data Sheet

Vanadium Inhibitor Carboxylate (RXSOL-81-1770-240)

1. Product and Company Identifaction

Product Name	Vanadium Inhibitor Carboxylate
Part Number	RXSOL-81-1770-240

Company Details:
RX MARINE INTERNATIONAL
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2. Composition / informationon ingredients

Name of Substance	Cas Number	Weight %
Magnesium Oxide	1309-48-4	30 - 60
Magnesium Carboxylates Blend	Trade secret.	10 - 30
Hydrotreated Naphthenic Distillates	64742-52-5	10 - 30
Heavy Aromatic Naphtha	64742-94-5	10 - 30
Asphalt	8052-42-4	1 - 5
Naphthalene	91-20-3	1 - 5

3. Hazards Identification

Physical State	Liquid
Odour	Aromatic Hydrocarbon
Colour	Dark Brown
OSHA/HCS status	This material is considered hazardous by the OSHA Hazard Communication Standard(29 CFR 1910.1200).
Emergency overview	Warning. COMBUSTIBLE LIQUID AND VAPOR. INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS AND NAUSEA AND MAY LEAD TO UNCONSCIOUSNESS. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. HARMFUL OR FATAL IF SWALLOWED. CAN ENTER LUNGS AND CAUSE DAMAGE. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. SUSPECT CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER. ASPIRATION HAZARD.

4. First Aid Measures

Eye Contact	Get medical attention immediately. Immediately flush eyes with plenty of water for at. least 15 minutes, occasionally lifting the upper and lower eyelids.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes.while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation:	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
Ingestion	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wear suitable protective clothing and gloves. Remove contaminated clothing and shoes.
Additional information	If product is ingested and vomiting occurs naturally, have person lean forward to reduce the risk of aspiration into the lungs.

5. Fire-fighting Measures

Flammability of the Product	Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.
Suitable extinguishing media	Use dry chemical, CO2, water spray (fog) or foam.
Unsuitable extinguishing media	Do not use a solid water stream or jet
Hazardous thermal decomposition products	Carbon Dioxide,Carbon monoxide,metal Oxide/oxides
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental Release Measures

Personal Protection	No action shall be taken involving any personal risk or without suitable training.Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Small spill	Stop leak if without risk. Move containers from spill area. Absorb with an inert material. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
Large spill	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Dike spill area and do not allow product to reach sewage system or surface or ground water. Notify any reportable spill to authorities. (See section 12 for environmental risks and 13 for disposal information.) Contain and collect spillage with noncombustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and Storage

Handling	Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
Storage	Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Hygiene measures	Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

8. Exposure controls and personal protection

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredients:	List name	ppm	mg/m³	Other	ppm	mg/m³	Other	ppm	mg/m³	other	Notations
Magnesium oxide	USACGIH	--	10	--	--	--	--	--	--	--	
	OSHAPEL	--	15	--	--	--	--	--	--	--	
	OSHAPEL 1989	--	10	--	--	--	--	--	--	--	(a)
Hydrotreated naphthenic distillates	USACGIH	--	5	--	--	--	--	--	--	--	(b) (b)
	OSHAPEL	--	5		--	--	--	--	--	--	(a)
Asphalt, as benzene soluble aerosol Naphthalene	USACGIH	--	0.5	--	--	--	--	--	--	--	
	USACGIH	10	52	--	15	79	--	--	--	--	(C)
	OSHAPEL	10	50	--	--	--	--	--	--	--	
	OSHAPEL 1989	10	50	--	18	75	--	--	--	--	

	[a]Inhalable fraction [b]Total particulates [c]Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate. Mass TLVs (IPM–TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract.
Form	Consult local authorities for acceptable exposure limits. Only components of this product with established exposure limits appear in the box above. If OSHA permissible exposure levels are shown above they are the OSHA 1989 levels or are from subsequent OSHA regulatory actions. Although the 1989 levels have been vacated the 11th Circuit Court of Appeals, Baker Hughes recommends that these lower exposure levels be observed as reasonable worker protection.
Recommended monitoring procedures	If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
Engineering measures	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Use explosion-proof ventilation equipment.
Hygiene measures	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Take off contaminated clothing and wash before reuse.
Personal protection	
Respiratory	If a risk assessment indicates it is necessary, use a properly fitted, air purifying or supplied air respirator complying with an approved standard. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Hands	Chemical-resistant gloves: Nitrile or Neoprene gloves. 4H gloves.
Eyes	Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.



Gloves



Suit

9. Physical and chemical properties

Physical state	Liquid
Flash point	Closed cup: 67.2°C (153°F) [SFCC]
Auto-ignition temperature	Not available.
Flammable limits	Not available
Color	Brown. [Dark]
Odor	Brown. [Dark]
pH	9.4
	5% of product in 75% water / 25% isopropanol solution
Boiling/condensation point	Not available.
Initial Boiling Point	: 178°C (352.4°F)
Melting/freezing point	Not available
Relative density	1.31 (15.6°C)
Density	10.91 (lbs/gal)
Vapor density	>1 [Air = 1]
Odor threshold	Not available.
Evaporation rate	Not available
VOC	301 g/l
Viscosity	Dynamic (15.6°C): 64 cP
Solubility (Water)	Insoluble
Vapor pressure	Not available

Pour Point	-42.8°C (-45°F)
Partition coefficient : (LogKow)	Not available.

10. Stability and reactivity

Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
Incompatible materials	Reactive or incompatible with the following materials: oxidizing materials.
Hazardous Decomposition Products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous Polymerization	Under normal conditions of storage and use, hazardous polymerization will not occur.

11. Toxicological information

Carcinogenicity Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Magnesium oxide	A4	-	-	-	-	-
Hydrotreated naphthenic distillates	A4	-	-	-	-	-
Asphalt	A4	3	-	+	-	-
Naphthalene	A4	2B	-	-	Possible	-

	Chronic toxicity Remarks
Magnesium oxide	Magnesium oxide is a component of this product. Metal fume fever has been reproduced in rats; the no-effect level with chronic exposures up to 120 days was at least 1 mg/m³ (Pazynic and Cincevic, 1983; Pazynic, et al, 1984).
Magnesium carboxylates	Not available.
Hydrotreated naphthenic distillates	Distillates, petroleum, hydrotreated heavy naphthenic is a component of this product. Mice exposed dermally to 398 - 480 g/kg of mildly hydrotreated heavy naphthenic mineral oil, petroleum distillates for 22W - 80W developed tumors at the site of application. The severely treated product is classified by IARC as a Group 3, Animal Inadequate Evidence.
Heavy aromatic naphtha	Not available.

Asphalt	Asphalt is a component of this product. Chronic effects seem to result from inhalation of asphalt fumes. Several investigators have suggested that repeated exposure to asphalt or its fumes may result in an increased risk for various types neoplasms (rapid abnormal tissue growth) (Knecht & Woitowitz, 1989; Maizlish et al, 1988; Hansen, 1989; Austin et al, 1987). Asphalt has shown some genetic and tumorgenic effects in rats and mice. Administration to the skin of mice at 600 mg/Kg produced DNA adducts (cell type) (RTECS). An intramuscular dose of 5400 mg/Kg/24 weeks intermittent in rats, and 12 gm/Kg/12 weeks intermittent in mice produced neoplastic tumors. Application to the skin of mice at 905 gm/Kg/2 years, at 69 gm/Kg/43 weeks intermittent produced neoplastic tumors of the lungs, and respiratory system, and skin and appendages (RTECS). There are possible links between asphalt exposure and scrotal cancer (Wahlbery, 1974), Hodgkin's disease (Szelc et al, 1981), and lung cancer (Wilson, 1984); however, these studies generally involved possible mixed exposures with tar or pitch. At the present time, epidemiological studies have not separated significant confounders and have not adequately documented exposures; therefore, no firm conclusions can be drawn about the risk of cancer in humans chronically exposed to asphalt (Chiazze et al, 1991).
Naphthalen	This product contains naphthalene. A National Toxicology Program (NTP) report concluded there is clear evidence to support carcinogenicity of naphthalene in male and female rats. These observations were based on 2-year inhalation studies in which the test animals were exposed to 10, 30, and 60 ppm naphthalene. In male and female rats, exposure to naphthalene caused significant increases in the incidence of nonneoplastic lesions of the nose (NTP TR-500). The relevance of the rodent findings to humans is questionable. Naphthalene has caused hemolytic anemia, jaundice, cataracts (Shopp et al, 1984), allergic reactions (Tsyrkunov & Yakovleva, 1985), possible neurotoxicity (Riala et al, 1984), and aplastic anemia (Harden & Baetjer, 1978) in humans. Increased lung aveolar adenomas were seen in mice exposed to 30 ppm naphthalene for 6hrs/day for 6 months (ACGIH, 1992). Naphthalene crosses the placenta leading to methemoglobinemia (decreased ability for the blood to carry oxygen), and/or hemolytic anemia, conditions considered especially dangerous to the unborn (Reprotext). Liver and kidney damage has also been seen with exposure to naphthalene (Reprotext). Peripheral lens opacities occurred in 8 of 21 workers exposed to high levels of naphthalene fumes or vapors for 5 years, but cataracts have not been reported in other occupational studies. (Hathaway et al, 1991). The International Agency for Research on Cancer (IARC) evaluated naphthalene and concluded that there was sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence that it causes cancer in exposed humans. Accordingly, IARC classified naphthalene as a possible human carcinogen (Group 2B).

12. Ecological information

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
Naphthalene	Acute EC50 1.96 mg/L Fresh Water	Daphnia - Water flea - Daphnia magna - 24 hours	48 Hours
	Acute LC50 2350 ug/L Marine water	Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio	48 Hours
	Acute LC50 213 ug/L Fresh water	Fish - Crimson-spotted rainbowfish - Melanotaenia fluviatilis - Larvae - 1 days	96 Hours
Conclusion/Summary	Not available.		
	Biodegradability		
Conclusion/Summary	Not available.		

13. Disposal considerations

Waste treatment Method	The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any byproducts should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal should be in accordance with applicable regional, national and local laws and regulations.: Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	NA1993	Combustible liquid, n.o.s. (Contains: Heavy aromatic naphtha)	Combustible liquid.	III		**Remarks** This material is not regulated by DOT if transported in a packaging 119 gallons. This material is not regulated by TDG or IMO.
TDG Classification	Not - regulated.	-	-	-	-	
IMDG Class - - -	Not - regulated.	-	-	-	-	
IATA-DGR Class - -	Not - regulated	-	-	-	-	-
PG*	Packing group					
DOT Reportable Quantity	Naphthalene, 386 gal of this product.					
Marine pollutant	Not applicable					
North-America	NAERG : 128					

15. Regulatory information

HCS Classification	Combustible liquid Irritating material Carcinogen Target organ effects
U.S. Federal regulations	United States inventory (TSCA 8b): All components are listed or exempted. TSCA 12(b) one-time export: Naphthalene Clean Water Act (CWA) 307: Naphthalene Clean Water Act (CWA) 311: Naphthalene Clean Air Act (CAA) 112 regulated flammable substances: No products were found. Clean Air Act (CAA) 112 regulated toxic substances: No products were found. SARA 302/304/311/312 extremely hazardous substances: No products were found. SARA 302/304 emergency planning and notification: No products were found. SARA 302/304/311/312 hazardous chemicals: Magnesium oxide; Asphalt; Naphthalene SARA 311/312 MSDS distribution - chemical inventory - hazard identification: KI-85X CORROSION INHIBITOR: Fire hazard, Immediate (acute) health hazard,

WHMIS (Canada)	Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C(200°F). Class D-2A: Material causing other toxic effects (Very toxic). Class D-2B: Material causing other toxic effects (Toxic).
DSCL (EEC)	All components are listed or exempted..

HMIS

Health Hazard	: 2
Fire Hazard	: 2
Reactivity	: 0
Personal Protection	: H

Fire :

Health Hazard	: 2
Fire Hazard	: 2
Reactivity	: 0
Specific Hazard	: ..

16. Other information

Other Information

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