Material Safety Data Sheet

Hydrazine Hydrate 35 (RXSOL-42-1541-235)

1. Product and Company Identifaction

Product Name	Catalyzed Hydrazine Hydrate 35
Part Number	RXSOL-37-1541-235

Company Details:

RX MARINE INTERNATIONAL
105, A wing , BSEL , TECH PARK.
VASHI ,NEW BOMBAY 400703 INDIA

Branch : Kandla, Mumbai , Chennai, Vizag, Kolkata, UAE , OMAN , CANADA and KENYA

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2. Composition / informationon ingredients

Chemical Name	CAS	EC number	Weight Percent
Hydrazine	302-01-2	--	35
Catalyst Proprietory	---	---	5-10

3. Hazards Identification

Signal Word	Danger
Hazard Statements	H301 – Toxic if swallowed. H311 – Toxic in contact with skin. H314 – Causes severe skin burns and eye damage. H317 – May cause an allergic skin reaction. H331 – Toxic if inhaled. H350 – May cause cancer.
Precautionary statements	P201 – Obtain special instructions before use. P202 – Do not handle until all safety precautions have been read and understood. P405 – Store locked up. P280 – Wear protective gloves, protective clothing, eye protection, and face protection. P403 + P233 – Store in a well-ventilated place. Keep container tightly closed. P264 – Wash hands thoroughly after handling. P270 – Do not eat, drink or smoke when using this product P321 – Specific treatment: Use Pyridoxine to treat neurological symptoms of hydrazine exposure. P303 + P361 + P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin P301 + P310 – IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P304 + P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P271 – Use only outdoors or in a well-ventilated area. P260 – Do not breathe gas, mist, vapours, or spray. P310 – Immediately call a POISON CENTER or doctor/physician. P272 – Contaminated work clothing should not be allowed out of the workplace. P501 – Dispose of contents/container in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act
Classification of the substance or mixture	Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.
Supplemental Hazard Statements	None.
Other hazards	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

4. First Aid Measures

General advice	Consult a physician. Show this material safety data sheet to the doctor in attendance.
If inhaled	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Eye Contact	Contact lenses should never be worn when working with this product. Flush immediately with water for at least 30 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. Seek immediate medical attention.
Swallowed	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Skin Contact	Remove contaminated clothing. Rinse skin with lukewarm, gently flowing water for 30 minutes. Seek immediate medical attention. Completely decontaminate clothing, shoes and leather goods before reuse or discard.
Inhalation	Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek immediate medical attention.
Ingestion	Dilute with small quantities of water (200-250 mL). Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. Seek immediate medical attention.
Most important symptoms and effects, both acute and delaye	The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
Indication of any immediate medical attention and special treatment needed	No data available

5. Fire-fighting Measures

Flammability	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Suitable extinguishing media	Water is the preferred extinguishing media as it will dilute the material resulting in a non-flammable mixture. Use alcohol resistant foam, carbon dioxide, dry chemical, or vaporizing liquid extinguishing agents. Water spray or fog may also be effective for extinguishing or to absorb heat and keep exposed material from being damaged by fire.
Unsuitable extinguishing media	Not Available
Specific Hazards During Fire Fighting	Ammonia and hydrogen.
Further information	Use water spray to cool unopened containers.
Hazardous combustion products	Fire may cause the evolution of Sulphur oxides, nitrogen oxides.
Advice for firefighters	Wear self-contained breathing apparatus for firefighting if necessary.
Special Protective Equipment for Fire-Fighters	Wear NIOSH-approved self-contained breathing apparatus and protective clothing.
Specific Hazards Arising from the Chemical	Oxides of phosphorus Sodium oxides Not combustible. Fire may cause evolution of: Oxides of phosphorus Ambient fire may liberate hazardous vapours.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so. Prevent material from entering sewers. Flush with water to remove any residue.
Spillage	Oxidizing material. Stop leak if without risk. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. Do not touch spilled material. Prevent entry into sewers, basements or confined areas dike if needed. Eliminate all ignition sources. Call for assistance on disposal.
Enviromental Precaution	This material is miscible in water. Notify all downstream users of possible contamination. Divert water flow around spill if possible and safe to do so.
Methods and materials for containment and cleaning	Spills should be contained by diking and digging a containment pit sufficiently large enough to hold at least 10 times the spill. Dilute to approximately 10 times the volume with water and add 5-8% calcium hypochlorite solution slowly to completely oxidize the hydrazine. Dry calcium hypochlorite or other oxidizing agents should never be allowed to mix with undiluted hydrazine solutions. The resulting reaction is very vigorous, releasing large amounts of heat and hydrogen gas. Neutralized material can be absorbed using clay, sand or commercial absorbent and place material into containers for future disposal per local regulations. .

7. Handling and Storage

Advice on protection against fire and explosion	Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.

Incompatible materials	Keep away from alkalis, strong oxidizing agents and metals. Provide containment walls of adequate capacity to hold any accidental spills.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. For precautions see section 2.2.
Precautions for safe handling	Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. This product may become electrostatically charged during filling and transferring. Make sure equipment is properly bonded and grounded.
Storage conditions	Store in a dry place away from heat (below 50oC) and away from ignition sources and oxidants, preferably outdoors. Shelter drums stored outdoors from direct sunlight. For indoor storage areas, continuous ventilation should be provided.
Storage class	Storage class (TRGS 510): 3: Flammable liquids
Specific end use(s)	Apart from the uses mentioned in section 1.2 no other specific uses are stipulated
Advice on general occupational hygiene	Advice on safe handling Observe label precautions. Change contaminated clothing. Wash hands after working with substance.
Requirements for storage	Keep in cool and store under shade.

8. Exposure controls and personal protection

Exposure controls	Appropriate engineering controls Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Control parameters	Ingredients with workplace control parameters Contains no substances with occupational exposure limit values.
Engineering Control	Ventilation Requirements Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions should be provided. Supply sufficient replacement air to make up for air removed by exhaust systems. Other Do not store or transfer hydrazine solutions in open containers. Because hydrazine can be absorbed into the body by all common routes of exposure, protective equipment must be used. Personal protective equipment is not an adequate substitute for safety work practices, proper equipment design and good mantenance practices. Eye wash facility should be close in proximity. Emergency shower should be in close proximity.
Eye/face protection	Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury.
Hand Protection	Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.
Skin and Body Protection	Body suite, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse. Impervious boots of chemically resistant material should be worn at all times. No special footwear is required other than what is mandated at place of work.
Respiratory protection	A positive pressure, supplied-air respirator or a self-contained breathing apparatus is recommended if airborne concentrations exceed the appropriate standards.
Other Protection Measure	Handle in accordance with good industrial hygiene and safety practice.
Control of environmental exposure	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.



Gloves



Suit

9. Physical and chemical properties

Physical state	Ammonical liquid
Colour	Colourless to light yellow
Odour	Ammonia odour.
Odor Threshold	3.7 ppm
pH	10.1-10.7 (1% solution in neutral, distilled water)
Melting Point	65°C.
Boiling Point	109.4°C

Flash Point	250°C
Evaporation Rate	Not Applicable
Flammability (solid, gas)	No data available
Explosive limits	No Data Available
Upper/lower flammability or explosive limits	Not Applicable
Autoignition temperature	Not Applicable
Decomposition temperature	> 250°C
Vapour pressure	22 at 30°C
Density	No data available
Relative Density	No data available
Relative vapor density	No data available
Freezing point	No data available
Viscosity	Not Applicable
Partition coefficient	Log POW = -1.1 (Hydrazine)
Explosive properties	No data available
Solubility	Not Applicable
Ignition temperature	No information available.
Particle characteristics	No data available

10. Stability and reactivity

Reactivity	Slow reaction with oxygen from the air is possible at room temperature.
Stability	Stable at normal temperatures and pressures.
Possibility of hazardous reactions	Hazardous polymerization will not occur.
Conditions to avoid	Avoid heat, sparks, open flame. Avoid contact with incompatible materials. Avoid concentrating by evaporation. Pure substance can ignite spontaneously on contact with oxidizers, organic materials, and metal oxides.
Incompatible materials	Strong oxidizing agents, peroxides, nitrogen tetroxide, fuming nitric acid, fluorine, halogen fluorides, metal oxides such as those of iron, copper, lead, manganese and molybdenum. Package only in Teflon high density polyethylene or 304L or 347 stainless steels containing less than 0.5% molybdenum.
Hazardous decomposition products	Under catalytic influence or elevated temperatures: hydrogen, nitrogen and ammonia.

11. Toxicological information

Acute toxicity	Component Oral LD50 Dermal LD50 LC50 Hydrazine (35%) 150 mg/kg (rat) 227.5 mg/kg (rabbit) 630 ppm (female rat, 4hr) 65 mg/kg (guinea pigs) 1425 ppm (male rat, 4hr)
Skin corrosion/irritation	Corrosive. Capable of producing severe burns, blisters, ulcers and permanent scarring.
Serious eye damage/eye irritation	Corrosive. Capable of producing serious eye burns and permanent damage, including blindness.
Respiratory or skin sensitization	Skin contact may cause an allergic skin reaction. This material tested positive for skin sensitization in humans. Repeated or prolonged skin contact may cause some individuals to develop skin rash and other skin complications due to allergic skin sensitization.
Toxic Effects on Human	May cause damage to the following organs: upper respiratory tract. Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant, sensitizer), of ingestion, of inhalation (lung irritant, lung sensitizer).
Carcinogenicity	Remarks: No data available
Germ cell mutagenicity	Hydrazine has demonstrated mutagenic potential in several test systems such as bacteria, phage, higher plants, drosophila, and the host-mediated assay. It was negative in the dominant lethal assay in mice. Dermal contact with hydrazine at a dose causing skin damage and systemic effects has produced embryolethality in rats.
Reproductive toxicity	Animal testing did not show any effects on fertility. Fetotoxicity has been observed in animal studies.
Specific target organ toxicity - single exposure	No data available

Special Remarks on other Toxi Effects on Humans	Acute Potential Health Effects: Skin: Causes skin irritation. May cause skin sensitization, an allergic reation, which becomes evident upon re-exposure to this material. Eyes: Causes eye irritation. Ingestion: Causes gastrointestinal (digestive) tract irritation with nausea, vomiting, and diarrhea. May be harmful if swallowed. Inhalation: Causes respiratory tract irritation. May cause chemical pneumonitis and pulmonary edema, inflammation, edema of bronchi and larynx. Chronic Potential Health Effects: Repeated or prolonged skin exposure may cause allergic reactions in sensitive individuals. Repeated or prolonged exposure by inhalation may affect respiration and metabolism.
Additional Information	RTECS: TX9660000 Central nervous system depression, Lung irritation, Headache, Coma., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Heart - .

12. Ecological information

Bioaccumulative potential	An estimated BCF of 3 suggests the potential for bioconcentration in aquatic organisms is low.
Persistence and degradability	No data available
Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 131,00 mg/l - 96 h NOEC - Cyprinodon variegatus (sheepshead minnow) - 38 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	LC50 - Daphnia magna (Water flea) - 280 mg/l - 48 h
Toxicity to algae	Static test NOEC - Pseudokirchneriella subcapitata - 7,95 mg/l (OECD Test Guideline 201)
Toxicity to bacteria	Static test EC50 - activated sludge - 563 mg/l - 3 h (OECD Test Guideline 209) Remarks: (in analogy to similar products) The value is given in analogy to the following substances: sodium hypochlorite solution
Mobility in soil	If released to soil, hydrazine is expected to have very high mobility based on an estimated Koc of 2.
Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent,bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Endocrine disrupting properties	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Other adverse effects	No data available

13. Disposal considerations

Disposal methods	The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.
Contaminated packaging	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act
Waste treatment Method	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

14. Transport information

UN number	ADR/RID: 3293 IMDG: 3293 IATA: 3293
UN proper shipping name	ADR/RID: HYDRAZINE, AQUEOUS SOLUTION IMDG: HYDRAZINE, AQUEOUS SOLUTION IATA:HYDRAZINE, AQUEOUS SOLUTION
Transport hazard class(es)	ADR/RID: 6.1 IMDG: 6.1 IATA: 6.1
Packaging group	ADR/RID: III IMDG: III IATA: III
Environmental hazards	ADR/RID: NO IMDG: NO IATA: NO
Further information	No data available

15. Regulatory information

Inventory status	Components are on the following inventories: Polymaleic acid: - US TSCA, Canadian DSL, EU EINECS, Australian AICS, Korean, Philippine PICCS and Chinese Xi irritant R 36/38 Irritant to eyes & skin R 41 Risk of serious damage to eyes S24/25 Avoid contact with skin and eyes S26/28 In case of contact eyes & skin, rinse with plenty water and seek medical advice Section 312/313: Not listed. Not listed under California proposition 65.
Safety, health and environmental regulations/legislation specific for the substance or mixture	This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
National legislation	Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. : FLAMMABLE LIQUIDS
Other regulations	Take note of Dir 94/33/EC on the protection of young people at work.
Chemical Safety Assessment	For this product a chemical safety assessment was not carried out

16. Other information

Other Information	The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and weassume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Rx Marine International has been advised of the possibility of such damages. DISCLAIMER OF LIABILITY :The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.