

## 1. Product and Company Identification

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Product Name Zinc (II) Hydroxide  
Part Number RXSOL-19-1265-125

### Company Details:

RX MARINE INTERNATIONAL  
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## 2. Composition / Information on ingredients

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Chemical Name	CAS	EC number	Weight	Formula
Zinc (II) Hydroxide	20427-58-1	243-814-3	> 98%	Zn(OH) <sub>2</sub>

## 3. Hazards Identification

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Signal Word	Warning.
Hazard Statements	H333 ☒ May be harmful if inhaled. H316 ☒ Causes mild skin irritation. H410 ☒ Very toxic to aquatic life with long lasting effects. H320 ☒ Causes eye irritation.
P280 Wear protective gloves.P305 + P351 + P338	Wear eye protection/ face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Precautionary statements(Prevention)	P273 ☒ Avoid release to the environment. P264 ☒ Wash all exposed external body areas thoroughly after handling.
Precautionary statements response	P391 ☒ Collect spillage. P304+P312 ☒ IF INHALED: Call a POISON CENTER / doctor/physician/first aider/if you feel unwell. P305+P351+P338 ☒ IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P332+P313 ☒ If skin irritation occurs: Get medical advice. P337+P313 ☒ If eye irritation persists: Get medical advice / attention.
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.
Label elements	No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required

## 4. First Aid Measures

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General advice	Consult a physician. Show this MSDS to the doctor.
If inhaled	If breathed in, move person into fresh air. If not breathing, give artificial

Eye Contact	respiration. Remove contact lenses and irrigate exposed eyes with copious amounts of water for at least 15 minutes. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. If irritation, pain, swelling, lacrimation, or photophobia persist after 15 minutes of irrigation, the patient should be seen in a healthcare facility. Eye injury should only be undertaken by skilled personnel.
Swallowed	Never give anything by mouth to an unconscious person. Rinse mouth with water.
Skin Contact	Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation.
Inhalation	Rinse mouth with water, Avoid to give anything by mouth to an unconscious person If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bagvalve mask device, or pocket mask as trained. Perform CPR if necessary. Transport to hospital, or doctor.
Ingestion	Immediately give a glass of water. First aid is not generally required. If in doubt, contact a doctor.
Symptoms and effects, both acute and delayed	Zinc hydroxide can irritate the respiratory tract. Prolonged skin contact can produce a severe dermatitis called oxide pox. Exposure to high levels of can cause metallic taste, marked thirst, coughing, fatigue, weakness, muscular pain, and nausea followed by fever and chills. Severe overexposure may result in bronchitis or pneumonia with a bluish tint to the skin. Reversible liver enzyme abnormalities. Diarrhoea.
Indication of any immediate medical attention and special treatment needed	Absorption of zinc compounds occurs in the small intestine. The metal is heavily protein bound. Elimination results primarily from faecal excretion. The usual measures for decontamination (Ipecac Syrup, lavage, charcoal or cathartics) may be administered, although patients usually have sufficient vomiting not to require them. CaNa <sub>2</sub> EDTA has been used successfully to normalise zinc levels and is the agent of choice.

## 5. Fire-fighting Measures

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Flammability	May be combustible at high temperature.
Suitable extinguishing media	Product is not flammable
Unsuitable extinguishing media	None known
Special hazards arising from the substance or mixture	Metal & metal oxide.
Further information	No data available
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.
Fire fighting	Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use fire fighting procedures suitable for surrounding area.
Specific Hazards Arising from the Chemical	Has a fire-promoting effect due to the release of oxygen. Ambient fire may liberate hazardous vapours.

## 6. Accidental Release Measures

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Personal precautions, protective equipment and emergency procedures	Eyes: Wear safety goggles. Skin: Wear appropriate nitrile or rubber gloves, apron and safety shoes. Avoid contact with skin, eyes and clothing. Inhalation: Avoid dust formation. Avoid breathing dust, vapors. Wear
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	respiratory protection. Other: Ensure adequate ventilation, Evacuate personnel to safe areas. Keep unprotected persons away. For details see Section 8
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.
Personal Protection	Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: Protective equipment see section 8.
Environmental Precaution	Waste product should be handled and disposed of in a manner which complies with local, state / federal regulations. Zinc hydroxide may cause adverse long-term effects in the aquatic environment. Keep out of sewers, ditches or drains. For details see Section 12
Methods and materials for containment and cleaning	Sweep & clean up material immediately for disposal or recovery. Remove all ignition sources. Avoid contact with skin and eyes. Control personal contact with the substance, by using protective equipment.

## 7. Handling and Storage

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Advice on safe handling	Work under hood. Do not inhale substance/mixture.
Advice on protection against fire and explosion	Provide appropriate exhaust ventilation at places where dust is formed.
Incompatible materials	Keep away from alkalis, strong oxidizing agents and metals. Provide containment walls of adequate capacity to hold any accidental spills.
Hygiene measures	General industrial hygiene practice. For precautions see section 2.2.
Precautions for safe handling	Ensure good ventilation / exhaustion at work place. Keep bags / containers closed. Closed containers/bags should be opened in well ventilated area. Avoid contact with skin, eyes and clothing. Wash hands with soap and water and other exposed areas with water after handling. Handle empty bags / containers with care. Prevent concentration in hollow and sumps.
Precautions for safe storage	Absorbs CO <sub>2</sub> upon exposure to air. Keep bags / container closed when not in use. Store bags / containers under covered area, away from direct sunlight, sources of intense heat, or where freezing is possible. Store bags / containers away from incompatible chemicals (chlorinated rubber, zinc chloride, phosphoric acid etc). Inspect all incoming bags / containers before storage, to ensure bags / containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area. Empty bags / containers may contain residual particles; therefore, it should be handled with care. Never store food, feed, or drinking water in storage area. Do not store this material in open or unlabeled bags / containers
Conditions for safe storage, including any incompatibilities	Store the container tightly closed in a dry, cool and well-ventilated place. Store apart from foodstuff containers or incompatible materials.
Storage incompatibility	May react, explosively with magnesium and chlorinated rubber when heated Incompatible with linseed oil (may cause ignition) WARNING: Avoid or control reaction with peroxides. All transition metal peroxides should be considered as potentially explosive. For example transition metal complexes of alkyl hydroperoxides may decompose explosively. The pi-complexes formed between chromium(0), vanadium(0) and other transition metals (haloarene-metal complexes) and mono- or poly-fluorobenzene show extreme sensitivity to heat and are explosive. Metals and their oxides may react violently with chlorine trifluoride and bromine trifluoride. These trifluorides are hypergolic oxidisers. They ignite on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition. Avoid strong acids, bases.
Storage class	Storage class (TRGS 510): 13: Non Combustible Solids
Specific end use(s)	Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

Handling	Keep away from heat. Keep away from sources of ignition. Keep away from combustible material.. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as reducing agents, combustible materials, organic materials, metals
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

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Occupational Exposure limit values	The product does not contain any relevant quantity of materials with critical values that have to be monitored at the work place.
Exposure controls	General protective hygienic measures: Keep away from foodstuffs, beverages and food, Instantly remove any solid and impregnated garments, Wash hands during breaks and at the end of the work, Maintain an ergonomically appropriate working environment, Handle in accordance with safety practice. Appropriate engineering controls Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Engineering Control	Use 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.
Eye/face protection	Face shield. Safety glasses with side shields .Soft contact lenses may absorb and concentrate irritants.
Body Protection	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Skin protection	The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present. <ul style="list-style-type: none"> <li>o Polychloroprene.</li> <li>o Nitrile rubber.</li> <li>o Butyl rubber.</li> </ul> Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (Without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Penetration time of glove material in minutes: > 480, Glove thickness: 0.11 mm. Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Wear safety shoes.
Respiratory protection	Respirators may be necessary when engineering and administrative

controls do not adequately prevent exposures. The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option). Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended. Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program. Use approved positive flow mask if significant quantities of dust becomes airborne. Try to avoid creating dust conditions.

Handle in accordance with good industrial hygiene and safety practice.

Do not let product enter drains.

No data available

Other Protection Measure

Control of environmental exposure

Thermal hazards



Gloves Suit

## 9. Physical and chemical properties

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Physical state

Solid.

Colour

No data available

Odour

No data available

Odor Threshold

Not Applicable

pH

No data available

Melting Point

$\geq 133 - 6.81 - < 6.94$ .

Ignition temperature

No information available.

Particle characteristics

No data available

## 10. Stability and reactivity

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Reactivity

Not inherently chemically reactive. Zinc hydroxide and chlorinated rubber reacts violently. Contact with magnesium and linseed oil can cause violent reaction. Contact with strong acids may cause vigorous reaction. Contact with strong bases will form water and soluble zincates. Contact between zinc oxide and hydrogen fluoride, aluminum + hexachloroethane, zinc chloride or phosphoric acid, and water should be avoided.

Stability

Stable under recommended storage conditions. Unstable in the presence of incompatible materials. Hazardous polymerisation will not occur.

Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid

Avoid humidity, Keep away from acid & alkali.

Incompatible materials

Acids, oxidizing agents.

Hazardous Polymerization

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11. Toxicological information

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Acute toxicity	Oral: No data available Inhalation: No data available Dermal: No data available
Skin corrosion/irritation	Remarks: No data available
Serious eye damage/eye irritation	No data available
Respiratory or skin sensitization	No data available
Serious eye damage/eye irritation	No data available
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).
Germ cell mutagenicity	Not active in genetics assay.
Reproductive toxicity	Not considered as reproductive toxicity.
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 reaction, 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: AF3675000 Gastrointestinal disturbance To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. After uptake of large quantities: muscular symptoms agitation Convulsions Headache Tremors Nausea psychoses
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. RTECS: QR7300000 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## 12. Ecological information

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Persistence and degradability	No data available
Toxicity	Toxicity to fish LC50 - <i>Oncorhynchus mykiss</i> (rainbow trout) 1.1 2.5 mg/l 96 h Toxicity to daphnia and other aquatic invertebrates - EC50 - <i>Daphnia magna</i> 0.0098 mg/l - 48 h Acute EC50 0.17 mg/l Algae <i>Selenastrum Capricornutum</i> - 72 hours
Bioaccumulative potential	No data available
Toxicity to fish	LC50 - <i>Oryzias latipes</i> - 0,90 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - <i>Daphnia magna</i> (Water flea) - 17 mg/l - 24 h (OECD Test Guideline 202)
Toxicity to algae	EC50 - <i>Pseudokirchneriella subcapitata</i> - 0,14 mg/l - 72 h (OECD Test Guideline 201)
Eco Toxicity	Not Available
COD and BOD 5	Not Available
Products Biodegradation	The methods for determining the biological degradability are not applicable to inorganic substances.
Mobility in soil	No Information available
Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Endocrine disrupting properties	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or

Other adverse effects

Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

Environmental effects Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters. Wastes resulting from use of the product must be disposed of on site or at approved waste sites. Metal-containing inorganic substances generally have negligible vapour pressure and are not expected to partition to air. Once released to surface waters and moist soils their fate depends on solubility and dissociation in water. Environmental processes (such as oxidation and the presence of acids or bases) may transform insoluble metals to more soluble ionic forms. Microbiological processes may also transform insoluble metals to more soluble forms. For zinc and its compounds:

### 13. Disposal considerations

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Disposal methods

The generation of waste should be avoided or minimized wherever possible. Avoid dispersal or spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. This product is recyclable. Consideration of disposal via this route should be given.

Contaminated packaging

Do not reuse empty Bags / containers. Dispose of as unused product, Recommend crushing, puncturing, or other means to prevent unauthorized use as per comply with local regulations for disposal The information offered in this section is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the product and alter the waste classification and proper disposal methods.

Waste treatment Method

The material does not have an EPA waste number and is not a listed waste. Keep out of sewers, ditches or drains. All wastes must be handled and disposed of in accordance with applicable regulations

### 14. Transport information

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UN number

ADR/RID: 3077 IMDG: 3077 IATA: 3077

UN proper shipping name

ADR/RID:ZINC HYDROXIDE

IMDG:ZINC HYDROXIDE

IATA: ZINC HYDROXIDE

Transport hazard class(es)

ADR/RID: 9 IMDG: 9 IATA: 9

Packaging group

ADR/RID: III IMDG: III IATA: III

Environmental hazards

ADR/RID: No IMDG: Yes, Marine pollutant IATA: No

Special precautions for user

Tunnel restriction code : (C/E)

Further information

Not classified as dangerous in the meaning of transport regulations.

Transport in bulk according to IMO instruments

No data available

### 15. Regulatory information

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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

Safety, health and environmental regulations specific for the product in question European Inventory of Existing Commercial Chemical Substances (EINECS) -Listed. EC Inventory Listed. United States Toxic Substances Control Act (TSCA) Inventory- Listed. China Catalog of Hazardous chemicals 2015 Not- Listed. New Zealand Inventory of Chemicals (NZIoC) Listed. PICCS -Listed. Vietnam National Chemical Inventory -Listed. IECSC Listed. Korea Existing Chemicals List (KECL) -Listed.

Other regulations Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable. 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

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### 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 we assume 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 we 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.

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