

## 1. Product and Company Identification

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Product Name Hydrofluoric Acid 40%

Part Number RXSOL-19-1103-038

### Company Details:

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

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Chemical Name	CAS	EC numbe	Weight	Formula
Hydrofluoric acid	7664-39-3	231-634-8	>= 30 - < 50 %	HF

## 3. Hazards Identification

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Signal Word	Danger
Hazard Statements	H300 + H310 + H330 Fatal if swallowed, in contact with skin or if inhaled. H314 Causes severe skin burns and eye damage.
Precautionary statements	P260 Do not breathe mist or vapors. P270 Do not eat, drink or smoke when using this product. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
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

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General advice	Hydrofluoric (HF) acid burns require immediate and specialized first aid and medical treatment. Symptoms may be delayed up to 24 hours depending on the concentration of HF. After decontamination with water, further damage can occur due to penetration/absorption of the fluoride ion. Treatment should be directed toward binding the fluoride ion as well as the effects of exposure. Skin exposures can be treated with a 2.5% calcium gluconate gel repeated until burning ceases. More serious skin exposures may require subcutaneous calcium gluconate except for digital
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areas unless the physician is experienced in this technique, due to the potential for tissue injury from increased pressure. Absorption can readily occur through the subungual areas and should be considered when undergoing decontamination. Prevention of absorption of the fluoride ion in cases of ingestion can be obtained by giving milk, chewable calcium carbonate tablets or Milk of Magnesia to conscious victims. Conditions such as hypocalcemia, hypomagnesemia and cardiac arrhythmias should be monitored for, since they can occur after exposure. Consult a physician. Show this material safety data sheet to the doctor in attendance. Countermeasurements must be implemented at once. First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled	After inhalation: fresh air. Immediately call in physician. Keep respiratory tract clear. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.
Eye Contact	After contact with eyes: Rinse with plenty of water keeping eyelids open, protecting the unaffected eye (at least 10 minutes). Seek medical advice immediately! Remove contact lenses.
Swallowed	After swallowing: Immediately give to drink plenty of water, add calcium (in the form of calcium gluconate or calcium lactate). Caution: In the case of vomiting risk of perforation! Administer more calcium gluconate solution. Laxative: Sodium sulfate (1 tablespoon/1/4 l water). Seek medical advice immediately. Ensure that injured persons remain calm and protect them against heat loss.
Skin Contact	After contact with skin: Rinse with plenty of water for at least 10 minutes. Immediately remove contaminated clothes. Apply calcium gluconate gel (preparation: boil 5 g of calcium gluconate in 85 ml of hot distilled water, add 10 g glycerol. Allow 5 g of Carmellose-sodium to swell in the hot solution. Stable for 6 months, store in a cool place) and massage into the skin until the pain subsides, in between rinse with water and apply fresh gel. Continue gel therapy for another 15 minutes after the pain has subsided. If no calcium gluconate gel is available, apply several dressings thoroughly moistened with 20 % calcium gluconate solution. Medical advice absolutely required!
Inhalation	Remove patient to fresh air, keep warm and at rest and get medical assistance in necessary.
Ingestion	Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.
Most important symptoms and effects, both acute and delay	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	Note for the doctor: It is recommended to consult a doctor with experience in the treatment of lesions caused by hydrofluoric acid. If a systemic effect is suspected, monitoring and treatment in an intensive care unit is urgently required. Caution, ventricular fibrillation due to electrolyte imbalance.

## 5. Fire-fighting Measures

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Flammability	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Flash Point	Dry powder Dry sand
Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	For this substance/mixture no limitations of extinguishing agents are given. For this substance/mixture no limitations of extinguishing agents are given. For this substance/mixture no limitations of extinguishing agents are given.
Special hazards arising from the substance or mixture	Hydrogen fluoride Not combustible. Ambient fire may liberate hazardous vapours.
Further information	Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent

Hazardous combustion products

Advice for firefighters

Protective Equipment

Specific Hazards Arising from the Chemical

fire extinguishing water from contaminating surface water or the ground water system.

Fire may cause the evolution of Sulphur oxides, nitrogen oxides.

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Use personal protective equipment.

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

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Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection 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.

Environmental Precaution

Do not let product enter drains.

Methods and materials for containment and cleaning

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent and neutralising material (e.g. Chemizorb® HF, Merck Art. No. 101591). Dispose of properly. Clean up affected area.

## 7. Handling and Storage

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Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

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

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

Precautions for safe handling

For precautions see section 2.2.

Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in corrosive resistant polyethylene container with a resistant inner liner. Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons. Do not store in glass

Storage class

Storage class (TRGS 510): 6.1B: Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

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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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

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

Body Protection

Protective clothing, Rubber or plastic boots

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)). Full contact Material: Viton® Minimum layer thickness: 0,70 mm Break through time: > 480 min Material tested:KCL 890 Vitoject® This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)). Splash contact Material: Chloroprene Minimum layer thickness: 0,65 mm Break through time: > 120 minMaterial tested:KCL 720 Camapren®

Respiratory protection

Required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system. Recommended Filter type: Filter type ABEK The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Other Protection Measure

Handle in accordance with good industrial hygiene and safety practice.

Control of environmental exposure

Do not let product enter drains.

## 9. Physical and chemical properties

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Physical state

Liquid

Colour

Colorless

Odour

No data available

Odor Threshold

No data available

pH

No data available

Melting Point

No data available

Boiling Point

No data available

Flash Point

No data available

Evaporation Rate

Not Applicable

Flammability (solid, gas)

No data available

Explosive limits

No Data Available

Upper/lower flammability or explosive limits

No data available

Autoignition temperature

No data available

Decomposition temperature	No data available
Vapour pressure	No data available
Density	1,16 g/cm <sup>3</sup> at 20 °C
Relative Density	No data available
Relative vapor density	No data available
Freezing point	No data available
Viscosity	No data available
Partition coefficient	No data available
Explosive properties	No data available
Solubility	20 °C soluble
Ignition temperature	No information available.
Particle characteristics	No data available

## 10. Stability and reactivity

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Reactivity	No data available
Stability	The product is chemically stable under standard ambient conditions (room temperature) .
Possibility of hazardous reactions	No data available
Conditions to avoid	No data available
Incompatible materials	Metals, Alkali metals, Strong bases, glass
Hazardous decomposition products	In the event of fire: see section 5

## 11. Toxicological information

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Acute toxicity	Oral: No data available Acute toxicity estimate Oral - 10,63 mg/kg (Calculation method) Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach. Acute toxicity estimate Inhalation - 4 h - 1,25 mg/l - vapor(Calculation method) Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:., damage of respiratory tract Acute toxicity estimate Dermal - 10,63 mg/kg (Calculation method)
Skin corrosion/irritation	Skin - Rabbit Result: Causes burns. - 4 h (OECD Test Guideline 404) Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) Remarks: Symptoms may be delayed. Possible damages: Necrosis Tendency of poor wound-healing after penetration of the substance.
Serious eye damage/eye irritation	Eyes - Rabbit Result: Causes burns. (OECD Test Guideline 405) Remarks: (IUCLID) Remarks: Causes serious eye damage.
Respiratory or skin sensitization	Remarks: 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).
Carcinogenicity	Remarks: No data available
Germ cell mutagenicity	Test Type: Ames test Test system: S. typhimurium Result: negative Test Type: Chromosome aberration test in vitro Test system: Chinese hamster ovary cells Result: Positive results were obtained in some in vitro tests. Species: Rat Remarks: Cytogenetic analysis
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	Acute inhalation toxicity - burns of mucous membranes, Cough, Shortness of breath, Possible damages:., damage of respiratory tract, Resultant lesions may affectthe following:., bronchitis, Pneumonia, Lung edema
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.

RTECS: SP5670000 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### Additional Information

## 12. Ecological information

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Bioaccumulative potential	No data available
Persistence and degradability	No data available
Toxicity to fish	Static test LC50 - Oncorhynchus mykiss (rainbow trout) - 180 mg/l - 96 h Remarks: (in soft water) (Lit.)
Toxicity to daphnia and other aquatic invertebrates	Static test EC50 - Daphnia magna (Water flea) - 44,5 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	Static test ErC50 - Skeletonema costatum - 9 mg/l - 72 h (ISO 10253)
Toxicity to bacteria	Static test EC20 - activated sludge - > 1.000 mg/l - 30 min (OECD Test Guideline 209)
Mobility in soil	No Information available
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

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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 of as unused product.
Waste treatment Method	See <a href="http://www.retrologistik.com">www.retrologistik.com</a> for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

## 14. Transport information

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UN number	ADR/RID:1790 IMDG: 1790 IATA:1790
UN proper shipping name	ADR/RID:HYDROFLUORIC ACID IMDG:HYDROFLUORIC ACID IATA: HYDROFLUORIC ACID
Transport hazard class(es)	ADR/RID:8 (6.1) IMDG: 8 (6.1) IATA: 8 (6.1)
Packaging group	ADR/RID: II IMDG: II IATA: II
Environmental hazards	ADR/RID: NO IMDG: NO IATA: NO
Further information	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. International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors : Restrictions on the marketing and use of certain dangerous substances : Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).
Authorisations and/or restrictions on use	REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : potassium chromate This product contains a substance listed on Annex XIV of the REACH Regulation (EC) Nr. 1907/2006. Listed substance / Sunset Date : potassium chromate / 21.09.2017 After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate. REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : potassium chromate
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. : ACUTE TOXIC
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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