

1. Product and Company Identification

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Product Name Hydrofluoric Acid 40 %
Part Number RXSOL-38-1103-039

Company Details:

RX MARINE INTERNATIONAL
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2. Composition / Information on ingredients

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Product name	Cas No	EC No	Weight	Formula
Hydrofluoric acid 40%	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 dust/ fume/ gas/ mist/ vapors/ spray. P270 Do not eat, drink or smoke when using this product. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing 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	No data available
Supplemental Hazard Statements	No data available
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	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,

Swallowed	protecting the unaffected eye (at least 10 minutes). Seek medical advice immediately! Remove contact lenses 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	No data available
Ingestion	No data available
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	No data available
Suitable extinguishing media	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.
Special hazards arising from the substance or mixture	Not combustible. Fire may cause evolution of: Hydrogen fluoride Ambient fire may liberate hazardous vapours.
Further information	Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Hazardous combustion products	No data available
Advice for firefighters	Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
Protective Equipment	No data available
Specific Hazards Arising from the Chemical	No data available

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	No data available
Personal Protection	No data available
Environmental Precaution	Do not let product enter drains. Risk of explosion.
Methods and materials for	Cover drains. Collect, bind, and pump off spills. Observe possible

containment and cleaning

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.

Reference to other sections

For disposal see section 13.

7. Handling and Storage

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Advice on protection against fire and explosion

No data available

Incompatible materials

No data available

Hygiene measures

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

Advice on safe handling

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

Conditions for safe storage including any incompatibilities

No data available

Storage conditions

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons. Recommended storage temperature see product label.

Storage class

No data available

Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

Advice on general occupational hygiene

No data available

8. Exposure controls and personal protection

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Exposure controls

Personal protective equipment

Engineering Control

No data available

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). Full contact Material: butyl-rubber Minimum layer thickness: 0,7 mm Break through time: 480 min Material tested: Butoject® (KCL 898) 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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). Splash contact Material: Nitrile rubber Minimum layer thickness: 0,4 mm Break through time: 120 min Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

Respiratory protection

Recommended Filter type Filter E-(P3) 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

No data available

9. Physical and chemical properties

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Physical state

Liquid

Colour

Colorless

Odour	Stinging
Odor Threshold	No data available
pH	at 20 °C strongly acid
Melting Point	ca.-44 °C
Boiling Point	ca.112 °C at 1.013 hPa
Flash Point	No data available
Evaporation Rate	No data available
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
Viscosity	No data available
Density	No data available
Relative Density	No data available
Specific Gravity	No data available
Partition coefficient	No data available
Explosive properties	No data available
Solubility	at 20 °C soluble
Ignition temperature	No data available
Particle characteristics	No data available

10. Stability and reactivity

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Reactivity	No data available
Chemical stability	The product is chemically stable under standard ambient conditions (room temperature)
Possibility of hazardous reactions	Risk of ignition or formation of inflammable gases or vapours with: Alkali metals Fluorine Organic Substances vinyl acetate Risk of explosion with: potassium permanganate alkali hydroxides strong alkalis fluorides Potassium Metals sodium methanesulfonic acid Nitric acid with glycerol Exothermic reaction with: Acetic anhydride Ammonia ammonium hydroxide Sodium hydroxide fuming sulfuric acid Oxides of phosphorus silicon compounds ethanolamine sulfuric acid bismuth acid anhydrides
Conditions to avoid	Heating.
Incompatible materials	glass, Metals, quartzes/silicate ceramics Gives off hydrogen by reaction with metals
Hazardous decomposition products	In the event of fire: see section 5

11. Toxicological information

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Acute toxicity	Acute toxicity estimate Oral - 12,75 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 - 1,5 mg/l (Calculation method) Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages: damage of respiratory tract Acute toxicity estimate Dermal - 12,75 mg/kg (Calculation method)
Skin corrosion/irritation	Mixture causes severe burns.
Serious eye damage/irritation	Mixture causes serious eye damage. Risk of blindness!
Respiratory or skin sensitization	No data available
Carcinogenicity	No data available
Germ cell mutagenicity	No data available

Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	No data available
Additional Information	Other dangerous properties can not be excluded. This substance should be handled with particular care. Handle in accordance with good industrial hygiene and safety practice

12. Ecological information

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Persistence and degradability	No data available
Toxicity to fish	No data available
Toxicity to daphnia and other aquatic invertebrates	No data available
Toxicity	No data available
Toxicity to bacteria	No data available
Toxicity to algae	No data available
Products Biodegradation	No data available
Mobility in soil	No data 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	No data available
Other adverse effects	Endangers drinking-water supplies if allowed to enter soil or water. Harmful effect due to pH shift. Forms corrosive mixtures with water even if diluted. Discharge into the environment must be avoided

13. Disposal considerations

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Product	See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.
Contaminated packaging	No data available
Waste treatment Method	No data available

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
Special precautions for use	No data available		
Further information	No data available		

15. Regulatory information

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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.
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	A Chemical Safety Assessment was not carried out for this substance.

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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