

1. Product and Company Identification

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Product Name

Ammonia Solution A.R. Grade

Part Number

RXSOL-60-6137-500

Company Details:

RX MARINE INTERNATIONAL

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2. Composition / Information on ingredients

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Name of Substance	Cas Number
Ammonia Solution	1336-21-6

3. Hazards Identification

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Signal Word	Danger
Hazard Statements	H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage. H335 May cause respiratory irritation. H400 Very toxic to aquatic life
Precautionary statements - prevention	P273 Avoid release to the environment. P280 Wear protective gloves/ protective clothing/ eye protection P301 + P330 + P331 IF SWALLOWED: Rinse mouth.
Precautionary statements - response	P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308 + P310 IF exposed or concerned: Immediately call a POISON CENTER or doctor if you feel unwell.

4. First Aid Measures

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Skin Contact	Immediately flush with plenty of water for at least 15 minutes. Remove material from skin and clothing. Get medical attention if irritation persists. Immediate medical attention is not required.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids. If wearing contact lenses, remove them immediately. Rinse immediately with plenty of water for at least 15 minutes. Get medical attention if irritation persists. Immediate medical attention is not required.
Inhalation:	Remove patient to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Immediate medical attention is not required.
Ingestion:	Do not induce vomiting. Get medical attention immediately. Do not give anything by mouth to an unconscious person.
Most important symptoms/effects	Treat symptomatically based on individual reactions of patient.

Most important symptoms and effects, both acute and delayed

and handling of clothing & shoes from the individual is recommended. (Specialized Equipment) for first-aid is recommended.

Irritation and corrosion, bronchitis, Cough, Sore throat, Unconsciousness, Bloody vomiting, Nausea, collapse, shock, and loss of blindness!

5. Fire-fighting Measures

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Flammability of the Product

Suitable extinguishing media

Unsuitable extinguishing media

Flash Point

Autoignition Temperature

Explosion Limits Upper

Explosion Limits Lower

Sensitivity to Mechanical Impact

Sensitivity to Static Discharge

Specific Hazards Arising from the Chemical

Hazardous Combustion Products

Protective Equipment and Precautions for Firefighters

Further Information

Non Flammable.

Use water spray, alcohol-resistant foam, dry chemical extinguishers. Do not expose to fire with water spray.

For this substance/mixture no limitations of extinguishing media are known.

Not Available

Not Available

Not Available

Not Available

No information available

No information available

Combustion products may include carbon oxides or carbon monoxide, which may lead to release of irritating gases and vapors. Avoid breathing these vapors at sufficient concentrations, and in the presence of an ignition source.

Carbon monoxide (CO) Carbon dioxide (CO₂) Nitrogen oxides (NO_x)

Special protective equipment for firefighters. Stay in the vicinity of the fire-fighting apparatus. Prevent skin contact by keeping a safe distance.

Cool closed containers exposed to fire with water spray. Do not use high pressure water spray jet. Prevent fire extinguishing water from entering the ground water system.

6. Accidental Release Measures

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Small Spillage

Personal Protection

Environmental Precaution

Methods and materials for containment and cleaning

Dilute with water and mop up, or absorb with an inert dry material and place in disposal container. If necessary: Neutralize the residue with a weak acid.

Advice for non-emergency personnel: Do not breathe vapors. Avoid skin contact. Ensure adequate ventilation. Evacuate the area if necessary. Consult an expert.

Environmental Precautions Should not be released into the environment, water or sanitary sewer system.

If in a laboratory setting, follow Chemical Hygiene Practices. Collect spill material in containers for recovery or disposal. If necessary, use appropriate PPE. Spills should not be allowed to accumulate on surfaces, as they may be released into the atmosphere in sufficient concentrations. Clean up spills by clearing dust surfaces with compressed air). Collect and contain for disposal (HEPA filter)

7. Handling and Storage

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Handling

Wash hands after handling. Follow good hygiene procedure. Do not eat, drink, smoke, or use personal products when working in laboratory setting, follow Chemical Hygiene Plan. Use of PPE with eyes, skin, and clothing.

Storage

Provide ventilation for containers. Avoid storage near exits. Store away from foodstuffs. Store away from oxidizing agents in sealed containers. Store with like hazards.

Hygiene measures

Immediately change contaminated clothing. Apply preventive measures after working with substance.

8. Exposure controls and personal protection

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Engineering Control

Provide exhaust ventilation or other engineering controls to keep vapors below their respective threshold limit value. Ensure controls are proximal to the work-station location.

Personal Protection

Eye/face Protection : Wear appropriate protective eyewear as described by OSHA's eye and face protection regulations and EN166.

Skin and body protection : Wear appropriate protective clothing for exposure. Long sleeved clothing. Flame retardant antistatic clothing.

Respiratory Protection : Follow the OSHA respiratory protection regulations and European Standard EN 149. Use a NIOSH/MSHA approved respirator if exposure limits are exceeded or if irritation is observed.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practices.

Exposure Limits

No occupational exposure limits established.



Gloves Suit

9. Physical and chemical properties

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Form	Liquid
Colour	Clear
Odour	Ammonia
Odor Threshold	0.02 - 70.7 ppm Ammonia
pH	9
Melting Point	-57.5 °C
Boiling Point	37.7 °C at 1,013 hPa
Flash Point	Not Applicable
Evaporation Rate	Not Applicable
Flammability (solid, gas)	Not Applicable
Vapour pressure	483 hPa at 20 °C
Vapour Density	No Data Available
Specific Gravity	0.903 g/cm ³ at 20 °C
Lower explosion limit	15.4 %(V)

Upper explosion limit	33.6 %(V)
Autoignition Temperature	No Data Available
Solubility	Soluble
Viscosity	No Data Available
Decomposition temperature	No information available
Auto-ignition temperature	No information available
Explosive properties	Not classified as explosive.
Oxidizing properties	None

10. Stability and reactivity

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Reactivity Hazard	May be corrosive to Metal
Stability	Product is stable.
Possibility of hazardous reactions	A risk of explosion and/or of toxic gas formation exists with the following substances: Oxidizing agents, Mercury, Oxygen, silver compounds, nitrogen trichloride, hydrogen peroxide, silver, antimony hydroxide, Acids, Calcium, Chlorine, Chlorites, auric salts, perchlorates, sodium hypochlorite, mercury compounds, halogen oxides, Heavy metal salts, Acid chlorides, Acid anhydrides
Conditions to avoid	Store away from oxidizing agents, strong acids or bases.
Incompatible material	Strong oxidizers, acids, gold, mercury, halogens, silver, calcium hypochlorite bleaches.
Hazardous Decomposition Products	Ammonia and nitrogen oxides.
Hazardous Polymerization	Will not occur.

11. Toxicological information

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Acute toxicity	LDLO human: 43 mg/kg (29% solution) (RTECS) Symptoms: gastric pain, Bloody vomiting, If ingested, severe burn and throat, as well as a danger of perforation of the oesophagus and the stomach.
Acute dermal toxicity	This information is not available.
Skin corrosion	Skin irritation Causes severe burns.
Toxic Effects on Humans	Very hazardous in case of skin contact (corrosive, irritant, permeator), of ingestion, . Hazardous in case of eye contact (corrosive), of inhalation (lung corrosive).
Special Remarks on Chronic Effects on Humans	May affect genetic material based on tests with microorganisms and animals. May cause cancer (tumorigenic) based on No human data found at this time.
Further information After absorption:	Systemic effects: Nausea, collapse, shock, Unconsciousness, Convulsions Lung oedema, Possible effects: death Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice.

12. Ecological information

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Toxicity	No information available.
COD and BOD 5	Not Available
Products of Biodegradation:	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Mobility in soil	Mobility in soil: Accidental spillage may lead to penetration in the soil and groundwater. However, there is no evidence to cause adverse ecological effects
Results of PBT and vPvB assessment	Substance(s) in the mixture do(es) not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, a PBT/vPvB assessment was not conducted.
Other adverse effects	Additional ecological information Biological effects: Harmful effect due to pH shift. Forms toxic and corrosive mixtures with water even if diluted. Dis

environment must be avoided.

13. Disposal considerations

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Waste treatment Method

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original mixing with other waste. Handle uncleaned containers like the product itself

14. Transport information

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DOT

UN Number	UN 2672
Proper shipping name	AMMONIA SOLUTION.
Hazard Class	3
Subsidiary Hazard Class	8
Packing group	III

TDG

<u>UN Number</u>	<u>UN 2672</u>
<u>Proper shipping name</u>	<u>AMMONIA SOLUTION.</u>
<u>Hazard Class</u>	<u>3</u>
<u>Subsidiary Hazard Class</u>	<u>8</u>
<u>Packing group</u>	<u>III</u>

IATA

UN Number	UN 2672
Proper shipping name	AMMONIA SOLUTION.
Hazard Class	3
Subsidiary Hazard Class	8
Packing group	III

IMDG/IMO

UN Number	UN 2672
Proper shipping name	AMMONIA SOLUTION.
Hazard Class	3
Subsidiary Hazard Class	8
Packing group	III

15. Regulatory information

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Federal and State Regulation	Connecticut hazardous material U.S. TSCA, Canadian DSL, EU EINECS, Japanese ENCS, Australian AICS, Korea PICCS, Philippine PICCS
Other Regulation	Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the Inventory of Existing Commercial Chemical Substances.
WHMIS (Canada)	CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS E: Corrosive liquid.

HMIS

Health Hazard	: 3
Fire Hazard	: 0
Reactivity	: 0
Personal Protection	: H
Fire :	
Health Hazard	: 3
Fire Hazard	: 0
Reactivity	: 0
Specific Hazard	: ..

16. Other information

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Other Information

The information above is believed to be accurate and complete as available to us. However, we make no warranty of accuracy, expressed or implied, with respect to such information, and we do not intend to be bound by it. You should make their own investigations to determine the suitability of the information for particular purposes. In no event shall we be liable for any damages, including for lost profits or any special, indirect, incidental, or consequential damages arising, even if **RX Marine International** has been advised of the possibility of such damages.

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