Material Safety Data Sheet

Battery Fluid Alkali (RXSOL-25-7103-025)

1. Product and Company Identifaction

Product Name	Battery Fluid Alkali
Product Type	RXSOL-15-1103-025 Batteries Liquid (Electrolyte) for vehicle

Battery fluid, alkali (Liquid Electrolyte (Potassium Hydroxide + Lithium Hydroxide + Proprietory blend with Water))

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

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2. Composition / informationon ingredients

Ingredients	Proprietory blended D.I.Water	7732-18-5	76-78%	To complete solution
Main Ingrident	`Potassium hydroxide(KOH)`	1310-58-3	20-30%	230 to 250 Gram Per Ltr
Other Ingrident	`Lithium Hydroxide`	1310-65-2	2 - 5 %	20 to 25 Gram per Ltr

3. Hazards Identification

Inhalation	Mists and vapours are corrosive and can cause sever irritation and damage to mouth, nose, lungs, and throat. Exposure symptoms are from coughing, sneezing, tickling sensations in nose and throat to larngealaedma, bronchitis,and pulmonary edema. Prolonged exposure can result in erosion and discoloration of teeth, chronic irritation of the nose eyes throat and respiratory tract.
Skin Contact / Absorption	Severe irritation and burns to all human tissue. Repeated skin contact may cause dermatitis.
Eye Contact	Contact with even small amounts can result in severe damage (corneal burns and/or necrosis and conjunctivitis) which may result in sight loss. Dilute solution of sulphuric acid may produce temporary effects from which recovery is possible.
Ingestion	Severe irritation or burning of the mouth, throat, and stomach walls. May be fatal. Prolonged exposure can result in erosion and discoloration of teeth, chronic irritation of the nose eyes throat and respiratory tract.
Exposure Limits	ACGIH: 1mg/m3; 3mg/m3 NIOSH: TWA = 1mg/m3; IDLH = 15mg/m3 OSHA: TWA = 1mg/m3

4. First Aid Measures

Inhalation	Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek immediate medical attention.
Skin Contact / Absorption	Remove contaminated clothing. Wash affected area with soap and water. Seek medical attention if irritation occurs or persists
Eye Contact	Flush immediately with water for at least 15 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. Seek immediate medical attention
Ingestion	Do not induce vomiting. If vomiting occurs, lean victim forward to prevent breathing in vomitus. Give large amounts of water. Do not give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention.
Additional Information	Medical conditions that may be aggravated by exposure include asthma, bronchitis, emphysema, and other lung diseases, chronic nose, sinus or throat conditions. In the event of skin, eye contact, rapid and thorough flushing is essential.

5. Fire-fighting Measures

Conditions of Flammability:	Non-flammable
Means of Extinction:	Product does not burn. Suitable: Class D-Dry chemical, Carbon dioxide (CO2) , Carbon dioxide blanket, Sand, foam.
Flash Point:	Not applicable.
Auto-ignition Temperature:	Not applicable
Upper Flammable Limit	Not applicable
Lower Flammable Limit	Not applicable
Hazardous Combustible Products	Solution process causes formation of corrosive mists.
Special Fire Fighting Procedures	Wear NIOSH-approved self-contained breathing apparatus and protective clothing.
Explosion Hazards	Evolution of explosive hydrogen gas con contact with most metals. May ignite combustible material. Not sensitive to mechanical impact or static discharge

6. Accidental Release Measures

Leak /Spill	Wear appropriate personal protective equipment. Ventilate area. Stop or reduce leak if safe to do so. Prevent material from entering sewers.
Deactivating Materials	Lime, limestone, sodium carbonate (soda ash), sodium bicarbonate, dilute sodium hydroxide.

7. Handling and Storage

Handling Procedures	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. Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. Do not flush caustic residues to the sewer. Residues from spills can be diluted with water, neutralized with dilute acid such as acetic, hydrochloric or sulfuric. Absorb neutralized caustic residue on clay.
Storage Requirements	Store in a cool, dry, well-ventilated place. Keep container tightly closed and away from incompatible materials. Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against direct sunlight and physical damage. Isolate from incompatible substances.Avoid direct sunlight, high temperature and high humidity. Store in a cool and dry place. (Between 10 to 30 degree C & humidity of 45 to 85 %). Do not mix OR use like stirrer used for lead acid batteries for mixing the electrolyte as this will neutralize the alkaline electrolyte.

8. Exposure controls and personal protection

Protective Equipment	
Eyes	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.
Respiratory	Use NIOSH-approved respirator-full facepiece with cartridges (acid-gas and mists) or self-contained breathing apparatus.

Gloves	Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.
Clothing	Body suits, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.
Footwear	Impervious boots of chemically resistant material should be worn at all times.
Engineering Controls	
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	Emergency shower and eyewash should be in close proximity.

9. Physical and chemical properties

	20% concentration	30% concentration
Physical State	Liquid	liquid
Odor and Appearance	Clear colorless liquid. No odour.	Clear colorless liquid. No odour.
Odor Threshold	1.0 mg/m3 measured as mist	1.0 mg/m3 measured as mist
Specific Gravity (Water=1)	~ 1.18 at 20oC	1.29 at 20oC
Vapor Density (Air=1)	3.4	3.4
Evaporation Rate	Not available	Not available
Boiling Point	~ 104 oC	113oC
Freeze Point	~ -23oC	-89oC
pH	12 (5% w/w)	12 (5% w/w)
Water/Oil Distribution Coefficient	Not available	Not applicable
Density	9.84	10.75
% Volatiles by Volume	Not applicable	Not applicable
Solubility in Water	Miscible in water	Miscible in water

10. Stability and reactivity

Stability	Stable under normal conditions.
Incompatibility	Highly reactive with materials such as metals, metal oxides, hydroxides, nitrates, amines, carbonates, and other alkaline materials.
Hazardous Products of Decomposition	Toxic fumes of oxides of sulfur when heated to decomposition. Will react with water or steam to produce toxic and corrosive fumes. Reacts with carbonates to generate carbon dioxide gas, and with cyanides and sulfides to form poisonous hydrogen cyanide and hydrogen sulfide respectively.
Polymerization	Will not occur.

11. Toxicological information

Irritancy	Severe irritant. Skin and eye irritant.
Sensitization	Not available
Chronic/Acute Effects	Not available
Synergistic Materials	Not available
Animal Toxicity Data	LD50 (Oral, Rat)= 365mg/kg for Potassium Hydroxide, 210 mg/kg for Lithium Hydroxide LC50 (Inhalation, Rat)= 510mg/m3
Carcinogenicity	IARC has classified "strong Alkali mists containing Potassium Hydroxide"
Reproductive Toxicity	Investigated as a reproductive effector
Teratogenicity	Not available
Mutagenicity	Investigated as a mutagen

12. Ecological information

Fish Toxicity	LC50 Flounder (48 hr, aerated water) = 100 to 330mg/L Conditions of bioassay not specified; LC50 Shrimp (48 hr, aerated water) = 80 to 90mg/L Conditions of bioassay not specified; LC50 Prawn (48 hr, salt water) = 42.5ppm Conditions of bioassay not specified. This material may be toxic to aquatic life
Biodegradability	Not available
Environmental Effects	When released into the soil, this material may leach into groundwater. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition. When released into the air, this material may be removed from the atmosphere to a moderate extent by dry deposition

13. Disposal considerations

Waste Disposal: Dispose in accordance with all federal, provincial, and/or local regulations.

14. Transport information

GROUND – US-DOT/CAN-TDG/EU-ADR/APEC-ADR:

Proper Shipping Name	Batteries, Wet, Filled with Alkali		
Hazard Class	8	ID Number	UN2796
Packing Group	II	Labels	Corrosive

AIRCRAFT – ICAO-IATA:

Proper Shipping Name	Batteries, Wet, Filled with Acid		
Hazard Class	8	ID Number	UN2794
Packing Group	II	Labels	Corrosive

Reference IATA packing instructions 870

VESSEL – IMO-IMDG:

Proper Shipping Name	Batteries, Wet, Filled with Alkali		
Hazard Class	8	ID Number	UN2794
Packing Group	II	Labels	Corrosive

15. Regulatory information

Classified as hazardous according to the criteria of NOHSC, Schedule 6 poison according to SUSDP, Class 8 according to ADG

R-phrases: R35 Causes severe burns, and R41 Risk of Serious damage to eyes.

S-phrases: S2 Keep out of reach of children. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S30 Never add water to this product. S37/39 Wear suitable gloves and eye/face protection.

16. 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 Rx Marine International 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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