

Safety Data Sheet

1. IDENTIFICATION

Product Name: Battery Acid Synonyms: Battery Electrolyte (Acid) , Sulfuric Acid (Dilute)	Manufacturer/Supplier: Johnson Controls Battery Group Address: P.O. Box 590 Milwaukee, Wi 53201 US
General Information Number: (800)-333-2222 ext. 3138 Contact Person: Industrial Hygiene & Safety Department	Emergency number: CHEMTREC: 800-424-9300

2. HAZARD(S) IDENTIFICATION

Health		Physical	
Skin corrosion/irritation	Category 1	Corrosive to metals	Category 1
Serious eye damage/eye irritation	Category 1		
Carcinogenicity	Category 1A		
Specific target organ toxicity, single exposure	Category 3 Respiratory Tract irritation		

Label Elements:


<p>DANGER!</p> <p>May be corrosive to metals. Causes severe skin burns and eye damage. May cause cancer May cause respiratory irritation.</p>

Precautionary Statement

Prevention	Do not breathe vapor or mist. Wash thoroughly after handling.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. If exposed or concerned: Get medical advice/attention. Absorb spillage to prevent material damage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store in corrosive resistant container with a resistant inner line. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENTS (Chemical/Common Names):	CAS No.:	% by Wt:
Sulfuric Acid (Dilute)	7664-93-9	~35

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. FIRST AID MEASURES

Inhalation	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison control center or doctor for treatment advice.
Skin contact	Immediately take off all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by treated a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Call a physician or poison control center immediately
Ingestion	Call a physician or poison control center immediately. Rinse mouth. DO not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. May cause severe irritation or burns to the eyes, skin, gastrointestinal tract, and respiratory system. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: flush with water immediately. While flushing, remove clothes which do not adhere to affected areas. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media	Powder. Foam. Carbon dioxide (CO2)
Unsuitable extinguishing media	Do not use water jet as an extinguisher as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Firefighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials
General fire hazards	No unusual fire or explosion hazards noted. Not flammable, but reacts with most metals to form flammable hydrogen gas.

6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency preparedness	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Large spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand, or earth and place in containers. Prevent entry into waterways, sewer, basements or confined areas.

Small spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses, or onto the ground.

Environmental precautions

7. HANDLING AND STORAGE

Handling Do not breathe vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial practices.

Storage Store locked up. Store in original tightly closed container. Store away from incompatible materials. Keep away from heat, sparks, and open flame. (See section 10 of the SDS)

Other

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits

US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Ingredient	CAS Number	Type	Value
Sulfuric Acid (Dilute)	7664-93-9	PEL	1 mg/m ³

US ACGIH Threshold Limit Values

Ingredient	CAS Number	Type	Value	Form
Sulfuric Acid (Dilute)	7664-93-9	TWA	0.2 mg/m ³	Thoracic Fractions

US NIOSH: Pocket Guide to Chemical Hazards

Ingredient	CAS Number	Type	Value
Sulfuric Acid (Dilute)	7664-93-9	TWA	1 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s).

Engineering Controls (Ventilation):

Good ventilation required (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewashes station.

Respiratory Protection:

NONE REQUIRED UNDER NORMAL HANDLING CONDITIONS

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Skin Protection:

Wear appropriate chemical resistant gloves and clothing.

Eye Protection:

Wear safety glasses with side shields (or goggles). Face shield is recommended.

General Hygiene Considerations:

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid
Color	Clear/cloudy liquid
Odor	Slightly acid
Odor Threshold	Not available
pH	Not available
Melting Point	-79.6 °F / -62 °C
Boiling Point	230 °F / 110 °C
Flash Point	Not available
Evaporation Rate (Butyl Acetate = 1)	Not determined
Flammability	Not available
Upper/lower flammability or explosive limits	Not available
Vapor Pressure (mm Hg @ 20 ° C)	11.7
Vapor Density	3.4 (Air = 1)
Relative Density	1.285
Solubility	100%
% Volatile by Weight	0%
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available

10. STABILITY AND REACTIVITY

Reactivity	This product is stable and non-reactive under normal conditions of use, storage, and transport.
Stability	Material is stable under normal conditions.
Conditions to Avoid	Keep away from heat, sparks, open flames, and/or hot surfaces. No smoking. Contact with incompatible materials.
Incompatibility (materials to avoid)	Strong reducing agents. Reacts with organic materials. Combustibles. Metals. Carbides. Nitrates.
Hazardous Decomposition Products	Sulfur dioxide (SO ₂) Sulfur trioxide. Hydrogen.
Hazardous Polymerization	Will not occur.

11. TOXICOLOGICAL INFORMATION

INFORMATION ON LIKELY ROUTES OF EXPOSURE

Inhalation	Corrosive. Inhalation produces damaging effects on the mucous membranes and upper respiratory tract. Inhalation of vapors may cause lung edema. Prolonged inhalation may be harmful.
Skin Contact	Causes severe skins burns. Prolonged skin contact may cause dermatitis.
Eye Contact	Causes serious eye damage
Ingestion	Causes digestive tract burns.
Symptoms related to the physical, chemical, and toxicological characteristics	Burning pain and severe corrosive skin damage. May cause severe irritation or burns to the eyes, skin, gastrointestinal tract, and respiratory system. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

INFORMATION ON TOXICOLOGICAL EFFECTS

Acute Effects	Occupational exposure to the substance or mixture may cause adverse effects.
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Chronic Effects Prolonged inhalation may be harmful. Sulfuric acid fumes: Prolonged, repeated exposure to acid fumes/mists may cause chronic bronchitis, irritation of skin, mucous membranes and gastrointestinal tract and erosion of the teeth.

Toxicological Data

Constituents	Species	Test Results
Sulfuric Acid absorbed in glass-fiber material (CAS 7664-93-9)		
Acute		
<i>Oral</i>		
LD50	Rat	2140 mg/kg
Skin corrosion/irritation	Causes severe skin burns	
Serious eye damage/eye irritation	Causes severe skin burns	
Respiratory Sensitization	No data available	
Skin Sensitization	Not a skin sensitizer	
Germ Cell Mutagenicity	No data available to indicate product or any components present a greater than 0.1% are mutagenic or genotoxic	

CARCINOGENICITY

Mist: May cause cancer by inhalation

ACGIH Group A2 (Suspected human carcinogen)

IARC Monographs. Overall Evaluation of Carcinogenicity

Sulfuric Acid (CAS 7664-93-9) 1 Carcinogenic to humans

NTP Report on Carcinogens

Sulfuric Acid (CAS 7664-93-9) Known to be a Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects

Specific target organ toxicity - single exposure Not classified

Specific target organ toxicity - repeated exposure Not classified

Aspiration hazard Not classified.

12. ECOLOGICAL INFORMATION

Ecotoxicity This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and Degradability No data available

Bioaccumulative potential No data available

Mobility in soil No data available

Other adverse effects No other adverse environmental effects are expected from this component.

13. DISPOSAL CONSIDERATIONS

Disposal Instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazardous waste code: D002: Corrosive waste
The waste code should be assigned in discussion between the user, the producer, and the waste disposal company.

Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or lines may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal Instructions)
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION

United States DOT:

UN Number	UN2796
UN Proper shipping Name	Battery fluid, acid (Sulfuric acid (Dilute) RQ=2857 lbs)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	II
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Special provisions	A3, A7, B2, B15, IB2, N6, N34, T8, TP2, TP12
Packaging exceptions	154
Packaging non bulk	202
Packaging bulk	242

IATA

UN Number	UN2796
UN Proper shipping Name	Battery fluid, acid (Sulfuric acid (Dilute))
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	No
ERG Code	8L
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.

IMDG

UN Number	UN2796
UN Proper shipping Name	Battery fluid, acid (Sulfuric acid (Dilute))
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No
EmS	F-A, S-B
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.

15. REGULATORY INFORMATION

US Federal Regulations

All components are on the U.S. EPA TSCA Inventory List

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200

TSCA

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sulfuric Acid (Dilute)
(CAS 7664-93-9) LISTED

Superfund Amendment and Reauthorization Act of 1986 (SARA)

Hazard Categories
Immediate Hazard – Yes
Delayed Hazard – No
Fire Hazard – No
Pressure Hazard – No
Reactivity Hazard – No

SARA 302 Extremely hazardous substance

Chemical Name	CAS Number	Reportable Quantity	Threshold Planning Quantity	Threshold Planning Quantity – Lower value	Threshold Planning Quantity – upper value
Sulfuric Acid (dilute)	7664-93-9	1000	1000 lbs		

Section 311/312

Hazard Chemical:

Section 313 (TRI Reporting)

Chemical Name	CAS Number	% by weight
Sulfuric Acid (Dilute)	7664-93-9	~35

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Sulfuric Acid (Dilute) (CAS 7664-93-9)

Safe Drinking Water Act (SDWA)

Not regulated

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Sulfuric Acid (Dilute) (CAS 6552
7664-93-9)

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Sulfuric Acid (Dilute) (CAS 20 % WV
7664-93-9)

DEA Exempt Chemical Mixtures Code Number

Sulfuric Acid (Dilute) (CAS 6552
7664-93-9)

US State Regulations

US. Massachusetts RTK – Substance List

Sulfuric Acid (Dilute) (CAS 7664-93-9)

US New Jersey Worker and Community Right-to-know Act

Sulfuric Acid (Dilute) (CAS 7664-93-9)

US Pennsylvania Worker and Community Right-to-know Law

Sulfuric Acid (Dilute) (CAS 7664-93-9)

US Rhode Island RTK

Sulfuric Acid (Dilute) (CAS 7664-93-9)

US. California Proposition 65

WARNING: This product contains chemicals known to the State of California to cause cancer.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Sulfuric Acid (Dilute) (CAS 7664-93-9)

International Inventories

Country(s) or Region	Inventory Name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

* A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. OTHER INFORMATION

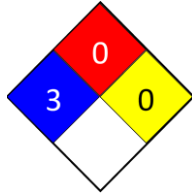
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Revision Date: -

Version #: 01

Further information: NFPA Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3=Serious 4 = Severe

NFPA ratings



Disclaimer

Johnson Controls Battery Group, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.