SEBANG GLOBAL BATTERY	Material Safety Data sheet (MSDS)	Control No.	GB-Elec-02
		Date First	May 16, 2008
		Date Revised	Jan 2021

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

A. PRODUCT NAME : Electrolyte

B. RECOMMENDED USE OF THE CHEMICAL AND RESTRICTIONS ON USE

: Product for Battery Electrolyte

C. MANUFACTURER/SUPPLIER/DISTRIBUTOR INFORMATION

MANUFACTURER : Sebang Global Battery CO.,Ltd.

122, Jeongdong-ro, Changwon-si, Gyeongsangnam-do

TEL: +82-55-279-9734 FAX: +82-55-282-2658

2. HAZARDS IDENTIFICATION

A. HAZARD CLASSIFICATION

PHYSICAL HAZARDS

: Not Classified.

HEALTH HAZARDS

:	Acute toxicity	Category 3 (inhalation)
:	Skin corrosion/irritation	Category 1
:	Serious eye damage/eye irritation	Category 1
:	Carcinogenicity	Category 1B
:	Specific target organ toxicity – single exposure	Category 1
:	Specific target organ toxicity – repeated exposure	Category 1

ENVIRONMENTAL HAZARDS

: Not Classified.

B. GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS

PICTOGRAMS :

SIGNAL WORD : DANGER.

HAZARD STATEMENTS

H330	Fatal if inhaled.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H350	May cause cancer (inhalation).
H370	Specific target organ toxicity – single exposure; Respiratory tract irritation
H372	Causes damage to organs (Respiratory tract)

PRECAUTIONARY STATEMENTS :

[Prevention]

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P271	Use only outdoors or in a wellventilated area.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P281	Use personal protective equipment as required.
P270	Do not eat, drink or smoke when using this product.

[Response]

P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P311	Call a POISON CENTER or doctor/physician.
P321	Specific treatment (see ... on this label).
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P363	Wash contaminated clothing before reuse.
P310	Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P307+P311	IF exposed: Call a POISON CENTER or doctor/physician.
P314	Get medical advice/attention if you feel unwell.

[Storage]

P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

[Disposal]

P501	Dispose of contents/container in accordance with local/regional/national regulations.

C. OTHER HAZARDS WHICH DO NOT RESULT IN CLASSIFICATION (e.g. Dust explosion hazards)

NFPA/HMIS Rating

: Health=3, Flammability=0, Instability=2
(0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name / Synonym	CAS No. or ID	Content (%)

Sulfuric acid / Oil of vitriol	7664-93-9 / 231-639-5*	28 - 40
Water	7732-18-5 / 231-791-2*	60 - 72

* European Inventory of Existing Commercial Chemical Substances (EINECS).

4. FIRST AID MEASURES

A. EYE CONTACT : Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. GET MEDICAL ATTENTION IMMEDIATELY.

B. SKIN CONTACT : If liquid get on the skin, immediately flush the contaminated skin with water for at least 15 minutes. If liquid penetrate through the clothing, immediately remove the clothing and shoes under a safety shower and continue to wash the skin for at least 15 minutes. GET MEDICAL ATTENTION IMMEDIATELY.

C. INHALATION : Move to fresh air in case of accidental inhalation of mist. If breathing has stopped, perform artificial respiration. If breathing is difficult, give oxygen. GET MEDICAL ATTENTION AS SOON AS POSSIBLE.

D. INGESTION : If liquid sulfuric acid or solutions containing sulfuric acid have been swallowed and the person is conscious, give one glass of water. Vomiting may occur spontaneously, but Do NOT induce vomiting. Never give anything by mouth to an unconscious person. GET MEDICAL ATTENTION IMMEDIATELY.

E. MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE OR DELAYED

EYES : Direct contact with the liquid or exposure to vapors or mists may cause tearing, redness, swelling, corneal damage and irreversible eye damage. Splashes in the eyes will cause severe burns.

SKIN : Direct contact can be severely irritating to the skin and may result in redness, swelling, burns and severe skin damage.

INHALATION : Corrosive. May be harmful or fatal if inhaled. May cause severe irritation and burns of the nose, throat and respiratory tract.

INGESTION : Causes serious burns of the mouth or perforation of the esophagus or stomach. May be fatal if swallowed.

F. INDICATION OF IMMEDIATE MEDICAL ATTENTION AND NOTES FOR PHYSICIAN

: Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

A. SUITABLE (AND UNSUITABLE) EXTINGUISHING MEDIA

: Dry chemical, soda ash, lime, sand or carbon dioxide.

B. SPECIFIC HAZARDS ARISING FROM THE CHEMICAL

: May evolve oxides of sulfur (SOx) under fire conditions.

C. SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS

: Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing.

D. FIRE AND EXPLOSION HAZARD

: Not flammable but highly reactive and capable of igniting finely divided combustible materials on contact. Containers exposed to extreme heat may rupture due to pressure buildup.

6. ACCIDENTAL RELEASE MEASURES

A. NECESSARY MEASURES AND PROTECTIVE GEAR TO PROTECT HUMANS

: Restrict access to area as appropriate until clean-up operations are complete. Stop or reduce any leaks if it is safe to do so. Avoid contact with skin, eyes and clothing. Do not touch spilled material. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection).

B. NECESSARY MEASURES TO PROTECT ENVIRONMENT

: Notify authorities and appropriate federal, state, and local agencies. Prevent the product from spreading into the environment. Avoid direct discharge into drains. It should not be directly discharged into lakes, ponds, waterways or public water supplies.

C. METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

: SMALL SPILLS: Dilute with water or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary neutralize the residue with a dilute solution of sodium carbonate. Wash affected area.
LARGE SPILLS: Contain liquid using absorbent material, by digging trenches or by building a dike. Absorb with dry earth, sand or other non-combustible material. Neutralize the residue with a dilute solution of sodium carbonate. Dispose of all contaminated materials in accordance with current local regulations.

7. HANDLING AND STORAGE

A. PRECAUTIONS FOR SAFE HANDLING

: Avoid contact with eyes. Do not take internally. Avoid the formation of mists in the atmosphere. Have emergency equipment (for fires, spills, leaks, etc.) readily available.

B. CONDITIONS FOR SAFE STORAGE (INCLUDING ANY INCOMPATIBILITIES)

: Store in suitable labeled containers. Keep containers closed. Handle containers with care. Store in a cool, well-ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. OCCUPATIONAL EXPOSURE LIMIT(S), BIOLOGICAL EXPOSURE STANDARD

OSHA-PEL TWA 1 mg/m3 (Sulfuric acid)

ACGIH-TLV TWA 0.2 mg/m3 (Sulfuric acid)

B. APPROPRIATE ENGINEERING CONTROLS

: If mist is generated when the material is heated or handled, adequate ventilation in accordance with good engineering practice must be provided to maintain concentrations above the specified exposure.

C. INDIVIDUAL PROTECTION MEASURES

Respiratory protection	:	If significant mists or aerosols are generated an approved respirator is recommended. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.
Eye protection	:	Wear safety glasses with side shields (or goggles).
Hand protection	:	Wear chemical resistant gloves. Gloves should be replaced immediately if signs of degradation are observed.
Body protection	:	Wear appropriate impervious clothing to prevent any possibility of skin contact. Eye wash station and safety shower are necessary.
Body protection	:	Use good work and personal hygiene practices to avoid exposure. Consider the provision in the work area of a safety shower and eyewash. Always wash thoroughly after handling chemicals. When handling this product never eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

A. APPEARANCE (PHYSICAL STATE, COLOUR etc.) : Liquid, grey.

B. Odour : Odorless

C. ODOR THRESHOLD : Not available.

D. pH : pH < 1 (Sulfuric acid)

E. MELTING POINT/FREEZING POINT(Concentration 28% ~ 40%) : -35℃~-50℃ (Sulfuric acid)

F. INITIAL BOILING POINT AND BOILING RANGE : 340℃ (Sulfuric acid)

G. FLASH POINT : Non-flammable.

H. EVAPORATION RATE : Not available.

I. FLAMMABILITY (SOLID, GAS) : Not applicable.

J. UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS

: Non-flammable.

K. VAPOR PRESSURE : 0.13kPa at 146℃

L. SOLUBILITY : Soluble in water.

M. VAPOR DENSITY : 3.4 (Air = 1) (Sulfuric acid)

N. SPECIFIC GRAVITY : 1.280/25℃ (37wt% Sulfuric acid)

O. PARTITION COEFFICIENT OF n-OCTANOL/WATER : -1.43 (Sulfuric acid)

P. AUTO-IGNITION TEMPERATURE : Not applicable.

Q. DECOMPOSITION TEMPERATURE : Not available.

R. VISCOSITY : 21mPa.s at 25℃ (Estimated)

S. MOLECULAR WEIGHT : Mixture.

10. STABILITY AND REACTIVITY

A. CHEMICAL STABILIT : Stable at normal temperatures and storage conditions.

B. POSSIBILITY OF HAZARDOUS REACTIONS

: Hazardous polymerization will not occur.

C. CONDITIONS TO AVOID (STATIC DISCHARGE, SHOCK, VIBRATION etc.):

: Avoid overheating. Contact with incompatible chemicals.

D. SUBSTANCES TO AVOID

: Organic materials and alkaline materials.

E. HAZARDOUS DECOMPOSITION PRODUCTS

: Sulfuric acid fume may be released during a fire involving this product.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

Inhalation : Corrosive. severe irritation and burns.

Ingestion : Serious burns.

Eye/Skin

Eye : Tearing, redness, swelling, corneal damage, irreversible eye damage and severe burns.

Skin : Redness, swelling, burns and severe skin damage.

B. Delayed and immediate effects and also chronic effects from short and long term exposure

Acute toxicity (possible route of exposure) :

Oral (LD50) : Rat 2140 mg/kg (Sulfuric acid)

Skin (LD50) : Not available.

Inhalation (LC50) : Rat 0.094 mg/L(4hr) (dust//mist)

Skin corrosion/irritation : cat 1

: pH < 1 (Sulfuric acid)

Serious eye damage/irritation : cat 1

: Rabbit Severely irritating (10% soln.)

Respiratory sensitization : Not available.

Skin sensitization : Not available.

Carcinogenicity : cat 1B

ACGIH Group A2, IARC Group 1 (Mist containing sulfuric acid)
* Note: Sulfuric acid mist is not expected under normal use of the product.

Germ cell mutagenicity : Not available.

Reproductive toxicity : Not available.

STOST-single exposure : cat 1

: Respiratory.

STOST-repeated exposure : cat 1

: Respiratory.

Aspiration hazard : Not available.

C. Numeric measure of toxicity (such as acute toxicity estimates) - ATEmix

Oral (LD50) : Rat 5350 - 7643 mg/kg

Skin (LD50) : Not available.

Inhalation (LC50) : Rat 0.87 - 1.24 mg/L(4hr) (dust//mist)

12. ECOLOGICAL INFORMATION

A. Aquatic/terrestrial ecology toxicity

Fish (LC50) : Not available.

Daphnia (EC50) : Not available.

Algae (EC50) : Not available.

B. Persistence and degradability

Persistence : Not available.

Degradability : Not available.

C. Bioaccumulative potential

: Not available.

D. Mobility in soil : Not available.

E. Other hazardous effects : Not available.

13. DISPOSAL CONSIDERATIONS

A. DISPOSAL METHODS

: Dispose of in accordance with local, state, and federal regulations. Hazardous wastes must be transported by a licensed hazardous waste transporter and disposed of or treated in a properly licensed hazardous waste treatment, storage, disposal or recycling facility. Consult local, state, and federal regulations for specific requirements.

B. PRECAUTIONS (INCLUDING DISPOSAL OF CONTAMINATED CONTAINER OR PACKAGE)

: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (BL). Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation.

A. UN NUMBER : UN 2796

B. UN PROPER SHIPPING NAME

ACID with not more than 51% acid or BATTERY FLUID, ACID

C. TRANSPORT HAZARD CLASS(ES) : 8

D. PACKING GROUP (IF APPLICABLE) : PG II

E. MARINE POLLUTANT SUBSTANCES (APPLICABLE/NOT APPLICABLE)

: Applicable.

F. SPECIAL PRECAUTIONS FOR USER : F-A, S-B

* China. List of Dangerous Goods (GB 12268-2005)
- Chinese Chemical Name: 硫酸, 含酸不超过51%,或酸性电池液
- UN Dangerous Goods Number(s) (UN Number): 2796
- Dangerous Goods Classification: 8
- Dangerous Goods Packing Group: II
- China Dangerous Goods Number(s) (CN Number): 81066

15. REGULATORY INFORMATION

₪ INVENTORIES

EINECS/EU : Listed (EINECS No. 231-639-5)

TSCA/US : Listed.

ENCS/JAPAN : Listed (ENCS No. 1-430)

AICS/AUSTRALIA : Listed.

DSL/CANADA : Listed.

IECSC/CHINA : Listed.

PICCS/PHILIPPINES : Listed.

KECI/S.KOREA : Listed (KE-32570)

₪ International Environmental Agreement

PIC : Not listed.

POPs : Not listed.

Ozone depletion : Not listed.

EU. Directive 67/548/EEC on the classification, packaging, and labelling of dangerous substances, Annex I

Classification : C; R35

Risk Phrases : R35

Safety Phrases : S1/2, S26, S30, S45

₪ U.S. Federal, Heanth and Environment) and U.S. Federal, Right-To-Know

CERCLA Section 103 (40 CFR 302.4)

: 1000 lb (453.599 kg)

EPCRA (SARA Title III) Section 302 (EHS -TPQ)

: 1000 lb (453.599 kg)

EPCRA (SARA Title III) Section 304 (EHS - Reporting Quantities)

: 1000 lb (453.599 kg)

EPCRA (SARA Title III) Section 313 - Toxic chemical release reporting

: Sulfuric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)

OSHA Specifically Regulated Substances (29 CFR 1910.1001-.1052)

: Not applicable.

₪ CANADA REGULATORY INFORMATION

WHMIS Ingredient Disclosure List : Regulated.

NOTE: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the Safety Data Sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

A. SOURCE OF DATA :

Guideline for Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

EC-ECB, International Uniform Chemical Information Database (IUCLID)

Hazardous Substances Data Bank (HSDB)

Registry of Toxic Effects of Chemical Substances (RTECS)

National Institute of Technology and Evaluatio -NITE (Japan).

NFPA 704 Standard System for the Identification of the Hazards of Materials for Emergency Response.

International Chemical Safety Cards(ICSC)(http://www.nihs.go.jp/ICSC)

3E Company/Ariel WebInsight DB.

B. THE DATE OF PREPARATION OF THE MSDS : May 16, 2008

C. THE DATE OF PREPARATION OF THE LATEST REVISION

: Jan 2021

D. OTHER INFORMATIO:

The above information is believed to be correct but does not propose to be all inclusive and shall be used only as a guide. Sebang Global Battery CO.,Ltd. shall not be held liable for any damage resulting from handling or from contact with the above product. Each individual should make a determination as to the suitability of the information for their particular purpose(s). Various government agencies may have specific regulations regarding the transportation, handling, storage, use, or disposal of this product which may not be covered by this MSDS. The user is responsible for full compliance.