1. Identification of the substance/mixture and of the company/undertaking
   Product identifier:
   Product name: Hydrazinium sulfate
   Product code (SDS NO): 3753E-1
   Details of the supplier of the safety data sheet
   Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.
   Address: 3-1, Honmachibashi, Chuo-ku, Osaka 540-0029, JAPAN
   Division: Safety Management Dept. of Chemicals
   Telephone number: +81-6-6946-8061
   FAX: +81-6-6946-1607
   e-mail address: kagakuhinanzenkanri@kishida.co.jp

2. Hazards identification
   GHS classification and label elements of the product
   Classification of the substance or mixture
   HEALTH HAZARDS
   Acute toxicity Oral: Category 4
   Skin sensitization: Category 1
   Germ cell mutagenicity: Category 2
   Carcinogenicity: Category 2
   Specific target organ toxicity – single exposure: Category 1 (nerve/nervous system, liver)
   Specific target organ toxicity – single exposure: Respiratory tract irritation Category 3
   Specific target organ toxicity – repeated exposure: Category 1 (liver, adrenal)
   Specific target organ toxicity – repeated exposure: Category 2 (kidney, blood/blood system, CNS)
   (Note) GHS classification without description: Not applicable/Out of classification/Not classifiable
   Label elements
   Signal word: Danger
   HAZARD STATEMENT
   Harmful if swallowed
   May cause an allergic skin reaction
   Suspected of causing genetic defects
   Suspected of causing cancer
   Causes damage to organs after single exposure
   May cause respiratory irritation
   Causes damage to organs through prolonged or repeated exposure
   May cause damage to organs through prolonged or repeated exposure
   PRECAUTIONARY STATEMENT
   Prevention
   Do not breathe dust/fume/gas/mist/vapors/spray.
   Use only outdoors or in a well-ventilated area.
   Wash contaminated parts thoroughly after handling.
   Wear protective gloves.
Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product.

Response
- Get medical advice/attention if you feel unwell.
- **IF INHALED:** Remove person to fresh air and keep comfortable for breathing.
- **IF ON SKIN:** Wash with plenty of soap and water.
- If skin irritation or rash occurs: Get medical advice/attention.
- Take off contaminated clothing and wash it before reuse.
- Rinse mouth.
- **IF SWALLOWED:** Call a POISON CENTER or doctor/physician if you feel unwell.

Storage
- Store in a well-ventilated place. Keep container tightly closed.

Disposal
- Dispose of contents/container in accordance with local/national regulation.

3. Composition/information on ingredients

   **Mixture/Substance selection:**
   - **Substance**
   - **Ingredient name:** Hydrazinium sulfate
   - **Content (%):** 99 (min)
   - **Chemical formula:** H₆N₂O₄S
   - **Chemicals No, Japan:** 1-374; 1-430
   - **CAS No.:** 10034-93-2
   - **MW:** 130.12

   *Note: The figures shown above are not the specifications of the product.*

4. First-aid measures

   **Descriptions of first-aid measures**
   - **General measures**
   - Get medical attention/advice if you feel unwell.
   - **IF INHALED**
     - Remove person to fresh air and keep comfortable for breathing.
     - Call a POISON CENTER or doctor/physician if you feel unwell.
   - **IF ON SKIN (or hair)**
     - Take off immediately all contaminated clothing. Rinse skin with water/shower.
     - Wash with plenty of soap and water.
     - If skin irritation or rash occurs: Get medical advice/attention.
   - **IF IN EYES**
     - Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
     - If eye irritation persists: Get medical advice/attention.
   - **IF SWALLOWED**
     - Rinse mouth.
     - Call a POISON CENTER or doctor/physician if you feel unwell.

5. Fire-fighting measures

   **Extinguishing media**
   - **Suitable extinguishing media**
     - Use appropriate extinguishing media suitable for surrounding facilities.
   - **Specific hazards arising from the substance or mixture**
     - Containers may explode when heated.
Fire may produce irritating, corrosive and/or toxic gases.

Advice for firefighters

Specific fire-fighting measures
Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters
Wear fire/flame resistant/retardant clothing.
Wear protective gloves/protective clothing/eye protection/face protection.
Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

6. Accidental release measures
Personnel precautions, protective equipment and emergency procedures
Ventilate area after material pick up is complete.
Wear proper protective equipment.

Methods and materials for containment and cleaning up
Sweep up, place in a bag and hold for waste disposal.

Preventive measures for secondary accident
Collect spillage.

7. Handling and storage
Precautions for safe handling
Preventive measures
(Exposure Control for handling personnel)
Do not breathe dust/fume/gas/mist/vapors/spray.
(Protective measures against fire and explosion)
Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

Exhaust/ventilator
Exhaust/ventilator should be available.

Safety treatments
Avoid contact with skin.
Avoid contact with eyes.

Safety Measures/Incompatibility
Use only outdoors or in a well-ventilated area.
Wear protective gloves, protective clothing or face protection.
When using do not eat, drink or smoke.

Conditions for safe storage, including any incompatibilities
Recommendation for storage
Keep container tightly closed.
Store in a cool, dry place. Do not store in direct sunlight.

8. Exposure controls/personal protection
Exposure controls
Appropriate engineering controls
Do not use in areas without adequate ventilation.
Eye wash station should be available.
Washing facilities should be available.

Individual protection measures
Respiratory protection
Wear respiratory protection.

Hand protection
Wear protective gloves.
Eye protection
Wear eye/face protection.

Safety and Health measures
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should not be allowed out of the workplace.
Take off contaminated clothing and wash it before reuse.

9. Physical and Chemical Properties
Information on basic physical and chemical properties

Physical properties
Appearance: Crystal or crystalline powder
Color: Colorless~White
Odor: Odorless

Phase change temperature
Initial Boiling Point/Boiling point: decompose
Melting point/Freezing point: (decompose) 254°C
Decomposition temperature data N.A.
Flash point data N.A.
Auto-ignition temperature data N.A.
Explosive properties data N.A.
Vapor pressure data N.A.
Vapor density data N.A.
Specific gravity/Density data N.A.
Solubility
Solubility in water: Sparingly soluble
n-Octanol /water partition coefficient data N.A.

10. Stability and Reactivity
Chemical stability
Stable under normal storage/handling conditions.

Conditions to avoid
Contact with incompatible materials.
Contact with fire source.

Incompatible materials
Strong oxidizing agents

Hazardous decomposition products
Sulfur oxides, Nitrogen oxides

11. Toxicological Information
Information on toxicological effects

Acute toxicity
[Acute toxicity (Oral)]

[Hazardous Class Japan, base data]
(Hydrazinium sulfate)
rat LD50 = 601 mg/kg (HSDB, 2005)

No Irritant properties data available

Sensitization
[Sensitization]
[Hydrazinium sulfate] cat.1; BUA 205, 1996
Germ cell mutagenicity
[GHS Cat. Japan, base data]
(Hydrazinium sulfate) cat.2; CERI/NITE hazard assessment, 2004

Carcinogenicity
[GHS Cat. Japan, base data]
(Hydrazinium sulfate) cat.2; IARC (71, 1999) et al Hydrazines 2B

No Teratogenic effects data available
No reproductive toxicity data available

Delayed and immediate effects and also chronic effects from short- and long-term exposure

STOT

STOT—single exposure
[cat.1]
Japan published data
(Hydrazinium sulfate) nerve/nervous system, liver (CERI/NITE hazard assessment, 2004)
[cat.3(pul. irrit.)]
Japan published data
(Hydrazinium sulfate) Respiratory tract irritation (CERI/NITE hazard assessment, 2004)

STOT—repeated exposure
[cat.1]
Japan published data
(Hydrazinium sulfate) liver, adrenal (EHC 68, 1987)

[cat.2]
Japan published data
(Hydrazinium sulfate) kidney, blood/blood system, CNS (HSDB, 2005)

No Aspiration hazard data available

Additional data
May cause lung disorders by massive inhalation of powdered substance.
- e.g. fibrosis of lung tissue, cough, sputum, breath shortness, dyspnea, decline of lung function, interstitial lung disease, pneumothorax

12. Ecological Information

Ecotoxicity
No Aquatic toxicity data available
No Persistence and degradability data available
No Bioaccumulative potential data available
No Mobility in soil data available
Ozone depleting chemical data not available

13. Disposal considerations

Waste treatment methods
Dispose of contents/container in accordance with local/national regulation.

14. Transport Information

Not applicable to UN NO.

Environmental hazards
MARPOL Annex V – Substances Harmful to Marine Environment
Specific target organ toxicity – repeated exposure: cat.1
Hydrazinium sulfate
15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

US major regulations
- TSCA
  - Hydrazinium sulfate

Other regulatory information
- Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information

GHS classification and labelling
- Acute Tox. 4: H302 Harmful if swallowed
- Skin Sens. 1: H317 May cause an allergic skin reaction
- Muta. 2: H341 Suspected of causing genetic defects
- Carc. 2: H351 Suspected of causing cancer
- STOT SE 1: H370 Causes damage to organs after single exposure
- STOT SE 3: H335 May cause respiratory irritation
- STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

Reference Book
- Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN
- Recommendations on the TRANSPORT OF DANGEROUS GOODS 19th edit., 2015 UN
- Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012)
- 2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
- 2017 TLVs and BEIs. (ACGIH)
- Supplier's data/information

General Disclaimer

This information contained in this data sheet represents the best information currently available to us. However, no warranty is made with respect to its completeness and we assume no liability resulting from its use. It are advised to make their own tests to determine the safety and suitability of each such product or combination for their own purposes.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products’ properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2016).