

Safety Data Sheet

Section 1. Identification of the substance/mixture and of the company/undertaking

Product identifier:

Product name: Sulfur

Reference number(SDS): 15010jis_E1-3

Product type:

Reagent

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the product: Research and Development

Uses advised against: Do not use for other purposes.

Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

Address: 1-6, Ohmano-cho, Koshigaya-shi, Saitama 343-0844, Japan

Division: Quality Assurance Department

Telephone number: +81-48-986-6161

FAX: +81-48-989-2787

e-mail address: shiyaku-t@junsei.co.jp

Section 2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS

Flammable solids: Category 2

HEALTH HAZARDS

Specific target organ toxicity – single exposure: Category 1 (respiratory tract)

Specific target organ toxicity – repeated exposure: Category 2 (respiratory system, skin)

(Note) GHS classification without description: Not classified/Classification not possible

Label elements



Signal word: Danger

HAZARD STATEMENT

H228-Flammable solid

H370-Causes damage to organs

H373-May cause damage to organs through prolonged or repeated exposure

PRECAUTIONARY STATEMENT

Prevention

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Ground and bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Do not breathe dust/fume/gas/mist/vapors/spray.

Wash contaminated parts thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/face protection.

Do not eat, drink or smoke when using this product.

Response

In case of fire: Use water mist, foam, dry powder, dry sand to extinguish.

Get medical advice/attention if you feel unwell.

Sulfur, JUNSEI CHEMICAL CO., LTD., 15010jis_E1-3, 22/May/2025

IF exposed or concerned: Call a POISON CENTER/doctor/physician.

Storage

Store locked up.

Disposal

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

Other hazards

The product does not contain any ingredient designated as PBT and/or vPvB.

The product does not contain any ingredients designated as Endocrine disrupting properties.

Specific Physical and Chemical hazards

Flammable solid. Vapor/air mixture may explode.

Section 3. Composition/information on ingredients**Mixture/Substance selection:****Substance**

Ingredient name: Sulfur

Content (%): 98.0<

Chemical formula: S

CAS No.: 7704-34-9

MW: 32.066(AW)

EC No.: 231-722-6

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

Section 4. First-aid measures**Descriptions of first-aid measures****General measures**

Get medical advice/attention if you feel unwell.

Keep victim warm and quiet.

Call emergency medical service.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.

Give artificial respiration if victim is not breathing.

Administer oxygen if breathing is difficult.

IF INHALED: Call a POISON CENTER/doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water or shower.

If skin irritation or rash occurs: Get medical advice/attention.

Remove and isolate contaminated clothing and shoes.

Removal of solidified molten material from skin requires medical assistance.

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.

IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Burning sensation. Cough. Sore throat. Diarrhoea.

(Symptoms when skin and/or eye contact)

Conjunctival redness of the eyes. Redness of the skin. Pain of the eyes. Blurred vision.

Indication of any immediate medical attention and special treatment needed

Ensure that medical personnel are aware of the material(s) involved, and take precautions

to protect themselves.

Specific treatment is required.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use water mist, foam, dry powder, dry sand to extinguish.

Unsuitable extinguishing media

Unsuitable extinguishing media data is not available.

Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Cool container with water spray.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.

Wear protective gloves/protective clothing/eye protection/face protection.

Firefighters should wear self-contained breathing apparatus with a full facepiece operated in the positive pressure mode.

Section 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.

In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Do not touch or walk through spilled material.

Environmental precautions

Avoid release to headsprings, rivers, lakes, ocean and groundwater.

Methods and materials for containment and cleaning up

With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

If appropriate, moisten first to prevent dusting.

Prevent entry into waterways, sewers, basements or confined areas.

Wet down with water and dike for later disposal.

Preventive measures for secondary accident

Collect spillage.

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Keep out of low areas.

Section 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, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Sulfur, JUNSEI CHEMICAL CO., LTD., 15010jis_E1-3, 22/May/2025

Ground and bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Wear protective gloves/protective clothing/eye protection/face protection.

Use personal protective equipment as required.

When using do not eat, drink or smoke.

May be ignited by friction, heat, sparks or flames.

Some may burn rapidly with flare burning effect.

Powders, dusts, shavings, borings, turnings or cuttings may explode or burn with explosive violence.

Any incompatibilities

Strong acids, Strong bases, Strong oxidizing agents should not be mixed with the chemicals.

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Storage

Conditions for safe storage

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

Keep cool. Protect from sunlight.

Store in accordance with local/national regulation.

Store locked up.

Container and packaging materials for safe handling data is not available.

Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See

Section 8 for exposure controls and personal protection recommendations.

Section 8. Exposure controls/personal protection

Control parameters

Control value and Concentration standard value under ISHA

Not established

Occupational Exposure Limit

JSOH

Not established

ACGIH

Not established

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

Select and wear respiratory protection in accordance with approved standards (e.g. JIS T8150).

Recommended respiratory protection: Dust mask

Hand protection

Wear protective gloves.

Inspect before use and replace worn or damaged gloves.

Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.

Sulfur, JUNSEI CHEMICAL CO., LTD., 15010jis_E1-3, 22/May/2025

Chemical-resistant, impervious gloves complying with an approved standard (e.g. JIS T8116) should be used.

Eye protection

Wear safety glasses with side-shields.

Wear eye/face protection in accordance with approved standards (e.g. JIS T8147).

Skin and body protection

Wear impervious clothing and boots in case of repeated or prolonged treatment.

Personal protective equipment for the body and skin should be selected based on the task being performed and the risks involved.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Solid in various forms (Crystals or crystalline powder)

Color: Yellow

Odor: Odorless or sulfur dioxide odor

Odor threshold data is not available.

Melting point/Freezing point: 107~120°C

Boiling point or initial boiling point: 445°C

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

Lower and upper explosion limit/flammability limit:

Lower explosion limit: 35 g/m³

Upper explosion limit: 1400 g/m³

Flash point: 160°C (Closed cup)

Auto-ignition temperature: 232°C

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Insoluble

Solubility in solvent: Slightly soluble in ethanol, benzene, diethyl ether; soluble in carbon disulfide.

n-Octanol/water partition coefficient data is not available.

Vapor pressure data is not available.

Density and/or relative density: 2.1 g/cm³

Relative vapor density (Air=1) data is not available.

Particle characteristics data is not available.

Section 10. Stability and Reactivity

Reactivity

Runaway polymerization will not occur.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

May form explosive dust-air mixtures.

If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.

On combustion, forms toxic and corrosive gases.

Reacts violently with strong oxidants, especially if powdered. This generates fire and explosion hazard.

Conditions to avoid

Contact with incompatible materials.

Open flames. Heating. Sparks.

Incompatible materials

Strong acids, Strong bases, Strong oxidizing agents

Hazardous decomposition products

Sulfur oxides

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Product]

Based on available data, the classification criteria are not met.

[Data for components of the product]

[NITE-CHRIP]

rat LD50: > 3000 mg/kg (source: NITE)

Acute toxicity (Dermal)

[Product]

Based on available data, the classification criteria are not met.

[Data for components of the product]

[NITE-CHRIP]

rat LD50: > 2000 mg/kg (source: NITE)

Acute toxicity (Inhalation)

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

[NITE-CHRIP]

dust: rat LC50: > 9.23 mg/L (source: NITE)

Irritant properties

Skin corrosion/irritation

[Product]

Based on available data, the classification criteria are not met.

[Data for components of the product]

[NITE-CHRIP]

Not classified (source: NITE)

Serious eye damage/irritation

[Product]

Based on available data, the classification criteria are not met.

[Data for components of the product]

[NITE-CHRIP]

Not classified (source: NITE)

Sensitization

Respiratory sensitization

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Skin sensitization

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Germ cell mutagenicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Carcinogenicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Reproductive toxicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Specific target organ toxicity (STOT)

STOT-single exposure

[Product]

Category 1, Causes damage to organs

[Data for components of the product]

[NITE-CHRIP]

Category 1 (respiratory tract) (source: NITE)

STOT-repeated exposure

[Product]

Category 2, May cause damage to organs through prolonged or repeated exposure

[Data for components of the product]

[NITE-CHRIP]

Category 2 (respiratory system, skin) (source: NITE)

Aspiration hazard

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Section 12. Ecological Information

Ecotoxicity

Aquatic toxicity

[Product]

Based on available data, the classification criteria are not met.

[Data for components of the product]

Hazardous to the aquatic environment, short-term (acute)

[NITE-CHRIP]

Crustacea (Mysid) 96-hour LC50: 736 mg/L (source: NITE)

Water solubility

[Data for components of the product]

none (source: ICSC, 2000)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

Bioaccumulative potential data is not available.

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

Section 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

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

Section 14. Transport Information

UN No., UN CLASS

UN Number or ID Number : 1350

UN Proper Shipping Name : SULPHUR

Class or division (Transport hazard class) : 4.1

Packing group : III

ERG GUIDE No.: 133

Special provisions No.: 242

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 1350

UN Proper Shipping Name : SULPHUR

Class or division (Transport hazard class) : 4.1

Packing group : III

Special provisions No.: 242; 967

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 1350

UN Proper Shipping Name : SULPHUR

Class or division (Transport hazard class) : 4.1

Hazard labels : Flamm. solid

Packing group : III

Special provisions No.: A105; A803

Environmental hazards

Marine pollutants (yes/no) : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Noxious Liquid Substances ; Cat. Z

Sulfur

Section 15. Regulatory Information

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

The product does not contain any ingredients listed in REACH SVHC candidate list.

U.S. Toxic Substances Control Act (TSCA) Inventory

Chemicals listed in TSCA Inventory

7704-34-9

All components are listed or exempted.

Other regulatory information

We are not able to check up the regulatory information with regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

Regulatory information in this section are limited to intentional ingredient(s), but does not contain information on non-intentional ingredients or impurities which are not informed by supplier(s).

Chemical safety assessment

Advice on safe handling for this product can be found in sections 7 and 8 of this SDS.

Section 16. Other information

GHS classification and labelling

H228-Flammable solids, Category 2: H228 Flammable solid

H370-STOT – single exposure, Category 1: H370 Causes damage to organs

H373-STOT – Repeated exposure, Category 2: H373 May cause damage to organs through prolonged or repeated exposure

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 23rd edit., 2023 UN

IMDG Code, 2024 Edition (Incorporating Amendment 42-24)

IATA Dangerous Goods Regulations (66th Edition) 2025

2024 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2025 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2024 Recommendation on TLVs (JSOH)

Notification No. 0111-1 (January 11, 2022), Chemical Hazards Control Division, Industrial Safety and Health Department, Labour Standards Bureau, MHLW in Japan

Supplier's data/information

Chemicals safety data management system "GHS Assistant" Version 4.33 (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform "NITE-CHRIP"

(https://www.chem-info.nite.go.jp/chem/chrip/chrip_search/systemTop)

GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.1) (May. 2024, METI)

Abbreviations and acronyms

SDS (Safety Data Sheet)

LD50 (Lethal Dose, 50%)

LC50 (Lethal Concentration, 50%)

IARC (International Agency for Research on Cancer)

ACGIH (American Conference of Governmental Industrial Hygienists)

EPA (US Environmental Protection Agency)

NTP (US National Toxicology Program)

METI (Ministry of Economy, Trade and Industry in Japan)

MHLW (Ministry of Health, Labour and Welfare in Japan)

MOE (Ministry of the Environment in Japan)

JSOH (Japan Society for Occupational Health)

ISHA (Industrial Safety and Health Act in Japan)

CSCL (Chemical Substances Control Law in Japan)

EU (European Union)

EC50 (Effective Concentration, 50%)

NOEC (No Observed Effect Concentration)

BOD (Biochemical Oxygen Demand)

COD (Chemical Oxygen Demand)

BCF (Bioconcentration Factor)

anh (anhydride)

General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this

Sulfur, JUNSEI CHEMICAL CO., LTD., 15010jis_E1-3, 22/May/2025

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 Data published in Japan (National Institute of Technology and Evaluation (NITE) Chemical Risk Information Platform (NITE-CHRIIP), up to FY2023).