

## Safety Data Sheet

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

**Product identifier:**

Product name: Arsenic, standard solution 1000mg/L

Reference number(SDS):59210jis\_J\_E2-2

**Product type:**

Reagent

**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

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### 2. Hazards identification

**GHS classification and label elements of the product****Classification of the substance or mixture****HEALTH HAZARDS**

Carcinogenicity: Category 1A

**ENVIRONMENT HAZARDS**

Hazardous to the aquatic environment (Acute): Category 3

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

**Label elements**

Signal word: Danger

**HAZARD STATEMENT**

H350-May cause cancer

H402-Harmful to aquatic life

**PRECAUTIONARY STATEMENT****Prevention**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Avoid release to the environment.

Use personal protective equipment as required.

**Response**

IF exposed or concerned: Get medical advice/attention.

**Storage**

Store locked up.

**Disposal**

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

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### 3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name: Arsenic trioxide

Content (%): 0.13

Chemical formula: As<sub>2</sub>O<sub>3</sub>

Chemicals No, Japan: 1-35; 9-2400

CAS No.: 1327-53-3

MW: 197.84

ECNO: 215-481-4

Ingredient name: Hydrochloric acid

Content (%): 0.4

Chemical formula: ClH

Chemicals No, Japan: 1-215

CAS No.: 7647-01-0

MW: 36.46

ECNO: 231-595-7

Ingredient name: Water

Content (%): Residual quantity of the ingredient mentioned above.

Chemical formula: H<sub>2</sub>O

CAS No.: 7732-18-5

MW: 18.02

ECNO: 231-791-2

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

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### 4. First-aid measures

Descriptions of first-aid measures

General measures

IF exposed or concerned: Get medical advice/attention.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.

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.

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/doctor/physician if you feel unwell.

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### 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

The product is non-flammable.

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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 full face piece operated positive pressure mode.

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## 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.

Environmental precautions

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

Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Preventive measures for secondary accident

Collect spillage.

Stop leak if you can do it without risk.

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

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## 7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Avoid breathing 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.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

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

Use personal protective equipment as required.

When using do not eat, drink or smoke.

Any incompatibilities

Bases should not be mixed with the chemicals.

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#### 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.

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## 8. Exposure controls/personal protection

### Control parameters

#### Control value

(Arsenic trioxide)

Japan control value (2009)  $\leq 0.003\text{mg-As}/\text{m}^3$

#### Adopted value

(Arsenic trioxide)

JSOH(2000) (10E-3)  $3\mu\text{g-As}/\text{m}^3$ ; (10E-4)  $0.3\mu\text{g-As}/\text{m}^3$

ACGIH(1992) TWA:  $0.01\text{mg-As}/\text{m}^3$  (Lung cancer)

(Hydrochloric acid)

JSOH(2014) (ceiling) 2ppm;  $3.0\text{mg}/\text{m}^3$

ACGIH(2002) STEL: C 2ppm (URT irr)

### 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.

Consult with your glove and/or personnel equipment manufacturer for selection of appropriate compatible materials.

##### Eye protection

Wear chemical safety goggle.

Wear eye/face protection.

##### Skin and body protection

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

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## 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless

Odor: None

Odor threshold data is not available.

Melting point/Freezing point data is not available.

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

Flammability (gases, liquids and solids): Non-flammable

Lower and upper explosion limit/flammability limit data is not available.

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Flash point: Non-flammable

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

Self-Accelerating Decomposition Temperature/SADT data is not available.

pH: 2.6~3.4

Dynamic viscosity data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Miscible

Solubility in solvent data is not available.

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

Vapor pressure data is not available.

Vapor density data is not available.

VOC data is not available.

Evaporation rate data is not available.

Density and/or relative density data is not available.

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

Relative density of the Vapor/air - mixture at 20°C (Air = 1) data is not available.

Critical temperature data is not available.

Particle characteristics data is not available.

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## 10. Stability and Reactivity

Reactivity

Reactivity data is not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

Possibility of hazardous reactions data is not available.

Conditions to avoid

Contact with incompatible materials.

Heat.

Incompatible materials

Bases

Hazardous decomposition products

Arsenic oxides, Chlorides

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## 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Arsenic trioxide) rat LD50=20~385mg/kg (EHC 224, 2001)

(Hydrochloric acid) rat LD50=238mg/kg (SIDS, 2009)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

(Hydrochloric acid) mist: rat LC50=0.42mg/L/4hr (SIDS, 2009)

Labor standard law, Japan; Toxic

Hydrochloric acid; Arsenic trioxide

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Hydrochloric acid) rabbit/mouse/rat/human : corrosive (SIDS, 2009)

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Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Arsenic trioxide) rabbit : eyes irritation (CERI hazard data book 2001-8, 2001)

(Hydrochloric acid) rabbit : corrosive (SIDS, 2002)

Sensitization

Respiratory sensitization

[GHS Cat. Japan, base data]

(Hydrochloric acid) cat. 1; Occupational/Environmental Allergy Society, Japan

Mutagenic effects data is not available.

Carcinogenicity

[GHS Cat. Japan, base data]

(Arsenic trioxide)

cat.1A; IARC Gr. 1 (IARC, 1987 (As compounds) et al.)

IARC-Gr.1 : Carcinogenic to humans

ACGIH-A1(1992) : Confirmed Human Carcinogen

JSOH-1: Classifiable as to Human Carcinogenicity

EU-Category 1A; Substances known to have carcinogenic potential for humans

(Hydrochloric acid)

IARC-Gr.3 : Not Classifiable as a Human Carcinogen

ACGIH-A4(2002) : Not Classifiable as a Human Carcinogen

Labor standard law, Japan : Carcinogen

Arsenic trioxide

Reproductive toxicity

[GHS Cat. Japan, base data]

(Arsenic trioxide) cat. 1A; EHC 224, 2001

STOT

STOT-single exposure data is not available.

STOT-repeated exposure data is not available.

Aspiration hazard data is not available.

Information on other hazards

Data on the preparation itself is not available.

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## 12. Ecological Information

Ecotoxicity

Aquatic toxicity

H402-Harmful to aquatic life

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(Arsenic trioxide) Crustacea (Brine shrimp) EC50=0.257mg/L/24hr (ECETOC TR91, 2003)

(Hydrochloric acid) Crustacea (Daphnia magna) EC50=0.492mg/L/48hr (SIDS, 2005)

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]

(Arsenic trioxide) Fish (Oncorhynchus kisutch) NOEC=0.1mg/L/180days (ECETOC TR91, 2003)

Water solubility

(Arsenic trioxide) 1.2~3.7 g/100 ml (20°C) (ICSC, 2008)

(Hydrochloric acid) 67 g/100 ml (30°C) (ICSC, 2000)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

(Arsenic trioxide) BCF=5 (Registered chemicals data check & review, Japan)

(Hydrochloric acid) log Pow=0.25 (ICSC, 2000)

Mobility in soil

Mobility in soil data is not available.

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Other adverse effects

Ozone depleting chemical data is not available.

Additional data

Data on the preparation itself is not available.

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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

Avoid release to the environment.

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

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14. Transport Information

UN No., UN CLASS

UN No. or ID No.: Not applicable

UN Proper Shipping Name : Not applicable

Class or division (Transport hazard class) : Not applicable

Packing group : Not applicable

Not applicable to IMDG Code

Not applicable to IATA Dangerous Goods Regulations

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

MARPOL Annex V – Prevention of pollution by garbage discharge

Carcinogenicity: cat.1, 1A, 1B

Arsenic trioxide

Maritime transport in bulk according to IMO instruments

Noxious Liquid ; Cat. Z

Hydrochloric acid(Z-33)

Non Noxious Liquid ; Cat. OS

Water(OS-18)

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15. Regulatory Information

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

Chemicals listed in TSCA Inventory

Arsenic trioxide; Hydrochloric acid; Water

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.

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**16. Other information**

## GHS classification and labelling

H350–Carc. 1A: H350 May cause cancer

H402–Aquatic Acute 3: H402 Harmful to aquatic life

## Reference Book

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39–18)

IATA Dangerous Goods Regulations (62nd Edition) 2021

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2021 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2020 Recommendation on TLVs (JSOH)

Supplier's data/information

Chemicals safety data management system "GHS Assistant" Version 4.11 (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform "NITE-CHRIP"

([https://www.nite.go.jp/en/chem/chrip/chrip\\_search/systemTop](https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop))

GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.0) (Mar. 2020, METI)

## Definitions and Abbreviations

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)

JSOH (Japan Society for Occupational Health)

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 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 2019).