



## Safety Data Sheet

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

Product identifier:

Product name: Orsat solution II

SDS No. : E0139E-2

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku,Osaka ,JAPAN

Division: Chemical Safety Management Department

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 3

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

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

Specific target organ toxicity – single exposure: Category 2(central nervous system)

Specific target organ toxicity – repeated exposure: Category 1(respiratory system)

Aspiration hazard: Category 1

Label elements



Signal word: Danger

**HAZARD STATEMENT**

Toxic if swallowed

Causes severe skin burns and eye damage

Causes damage to organs(respiratory system)

May cause damage to organs(central nervous system)

Causes damage to organs through prolonged or repeated exposure(respiratory system)

May be fatal if swallowed and enters airways

**PRECAUTIONARY STATEMENT**

**Prevention**

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

Wash contaminated parts thoroughly after handling.

Wear protective gloves, protective clothing or face protection.

Wear eye protection/face protection.

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

**Response**

Get medical advice/attention if you feel unwell.

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

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



or shower.

Wash contaminated clothing before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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:Potassium hydroxide

Content (%):36

Chemical formula:KOH

Chemicals No, Japan:1-369

CAS No.:1310-58-3

MW:56.1

ECNO:215-181-3

Ingredient name:Pyrogallol

Content (%):2.4

Chemical formula:C6H6O3

Chemicals No, Japan:3-554

CAS No.:87-66-1

MW:126.11

ECNO:201-762-9

Ingredient name:Water

Content (%):61

Chemical formula:H2O

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

Get medical advice/attention if you feel unwell.

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. Do NOT induce vomiting.



Immediately call a POISON CENTER/doctor/physician.

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## 5. Fire-fighting measures

### Extinguishing media

#### Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

#### 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.

### Advice for firefighters

#### Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

#### 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

Ventilate area until material pick up is complete.

Wear proper protective equipment.

### Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

### 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.

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## 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.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

#### Safety Measures

Wear protective gloves, protective clothing or face protection.

Wear eye protection/face protection.

When using do not eat, drink or smoke.

#### Any incompatibilities

See "10.Stability and Reactivity"

**Advice on general occupational hygiene**

- Wash contaminated parts thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Wash contaminated clothing before reuse.

**Storage****Conditions for safe storage**

- Keep container tightly closed.
- Store in a cool, dry place. Do not store in direct sunlight.
- Keep under lock and key.

**Container and packaging materials for safe handling**

- Glass
- Polyethylene

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**8. Exposure controls/personal protection****Control parameters****Adopted value**

- (Potassium hydroxide)
- ACGIH(1992) STEL: C 2mg/m<sup>3</sup> (URT, eye & skin 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.

**Eye protection**

- Wear eye/face protection.

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

Physical state: Liquid

Color: Brown

Odor: Odourless to practically odourless

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) data is not available.

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

Flash point data is not available.

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

**Solubility:**

Solubility in water: Soluble

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

Vapor pressure data is not available.

Density and/or relative density: 1.37

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



Particle characteristics data is not available.

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## 10. Stability and Reactivity

### Reactivity

Not available.

### Chemical stability

Stable under normal storage/handling conditions.

### Possibility of hazardous reactions

(Potassium hydroxide)

The solution in water is a strong base. It reacts violently with acid and is corrosive to metals such as aluminium, tin, lead and zinc. This produces a combustible/explosive gas (hydrogen). Reacts with ammonium salts. This produces ammonia. This generates fire hazard. Contact with moisture and water may generate heat. (ICSC 0357)

(Pyrogallol)

The solution in water is a weak acid. Reacts with oxidants and bases. (ICSC 0770)

### Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

### Incompatible materials

Acids, Bases, Oxidizing agents, Metals, Ammonium salts

### Hazardous decomposition products

Hydrogen, Ammonia

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## 11. Toxicological Information

### Information on toxicological effects

#### Acute toxicity

##### Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Potassium hydroxide)

rat LD50=273mg/kg (SIDS, 2004)

(Pyrogallol)

rat LD50=800mg/kg(female) (PATTY 6th, 2012); 1270mg/kg (male) (PATTY 6th, 2012)

##### Acute toxicity (Dermal)

[GHS Cat. Japan, base data]

(Pyrogallol)

rat LD50 >2100mg/kg (PATTY 6th, 2012)

#### Irritant properties

##### Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Potassium hydroxide)

rabbit/human corrosive (SIDS, 2004; ECETOC TR66, 1995; JSOH, 1978; PATTY 6th, 2012)

(Pyrogallol)

human irritation (HSDB, Access on Jun. 2017); rabbit/guinea pig mild irritation (HSDB, Access on Jun. 2017; J. Am. Coll. Toxicol., 10 (1), 67-85, 1991)

##### Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Potassium hydroxide)

rabbit corrosive (SIDS, 2004; JSOH, 1978; PATTY 6th, 2012)

(Pyrogallol)

human irritation (HSDB, Access on Jun. 2017); rabbit/guinea pig mild irritation (HSDB, Access on Jun. 2017; J. Am. Coll. Toxicol., 10 (1), 67-85, 1991)

Allergenic and sensitizing effects data is not available.



Mutagenic effects data is not available.  
Carcinogenic effects data is not available.  
Reproductive toxicity data is not available.

**STOT**

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

(Potassium hydroxide)

respiratory system (ACGIH 7th, 2001; SIDS, 2004; PATTY 6th, 2012)

(Pyrogallol)

central nervous system (PATTY 6th, 2012; HSDB, Access on Jun. 2017)

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

(Pyrogallol)

respiratory tract irritation (PATTY 6th, 2012; HSDB, Access on Jun. 2017)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(Potassium hydroxide)

respiratory system (ACGIH 7th, 2001)

Aspiration hazard

[cat.1]

[GHS Cat. Japan, base data]

(Potassium hydroxide)

cat. 1; ACGIH 7th, 2001; SIDS, 2004

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**12. Ecological Information**

Ecotoxicity

Ecotoxicity data is not available.

Water solubility

(Potassium hydroxide)

110 g/100 ml (25°C) (ICSC, 2010)

(Pyrogallol)

60 g/100 ml (20°C) (ICSC, 2006)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

(Pyrogallol)

log Pow=0.970 (estimated) (ICSC, 2006)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data 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

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



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**14. Transport Information**

UN No. or ID No.: 1814  
UN Proper Shipping Name :  
POTASSIUM HYDROXIDE SOLUTION  
Class or division (Transport hazard class) : 8  
Packing group : III  
ERG GUIDE No.: 154  
Special provisions No.: 223

**IMDG Code (International Maritime Dangerous Goods Regulations)**

UN No.: 1814  
Proper Shipping Name :  
POTASSIUM HYDROXIDE SOLUTION  
Class or division : 8  
Packing group : III  
Special provisions No.: 223

**IATA Dangerous Goods Regulations**

UN No.: 1814  
Proper Shipping Name :  
POTASSIUM HYDROXIDE SOLUTION  
Class or division : 8  
Hazard labels : Corrosive  
Packing group : III  
Special provisions No.: A3; A803

**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  
Specific target organ toxicity – repeated exposure: cat.1  
Potassium hydroxide

**Maritime transport in bulk according to IMO instruments**

Noxious Liquid ; Cat. Y  
Potassium hydroxide  
Non Noxious Liquid ; Cat. OS  
Water

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**15. Regulatory Information**

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

Chemicals listed in TSCA Inventory

Pyrogallol; Potassium hydroxide; Water

Other regulatory information

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

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**16. Other information**

GHS classification and labelling

Acute Tox. 3: H301 Toxic if swallowed  
Skin Corr. 1: H314 Causes severe skin burns and eye damage  
STOT SE 1: H370 Causes damage to organs  
STOT SE 2: H371 May cause damage to organs  
STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure  
Asp. Tox. 1: H304 May be fatal if swallowed and enters airways

**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)  
Supplier's data/information

**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 2020).