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

Product identifier:

Product name: Zirconium oxynitrate, 2-hydrate
Product code (SDS NO): 8818E-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

PHYSICAL AND CHEMICAL HAZARDS
Oxidizing solids: Category 3

HEALTH HAZARDS
Skin corrosion/irritation: Category 1C
(Note) GHS classification without description: Not applicable/Out of classification/Not classifiable

Label elements
Signal word: Danger

HAZARD STATEMENT
May intensify fire; oxidizer
Causes severe skin burns and eye damage

PRECAUTIONARY STATEMENT

Prevention
Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Keep/Store away from clothing/combustible materials.
Take any precaution to avoid mixing with combustibles and/or other incompatible materials.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash contaminated parts thoroughly after handling.
Wear protective gloves, protective clothing or face protection.

Response
In case of fire: Use appropriate media other than water for extinction.
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/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: Rinse mouth. Do NOT induce vomiting.

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

Specific Physical and Chemical hazards
Oxidizing material. Organic or combustible material may catch fire in contact with it.

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

Substance
Ingredient name: Zirconium oxynitrate, 2-hydrate
Content(%): 99(min)
Chemical formula: ZrO(NO₃)₂・2H₂O
Chemicals No., Japan: 1-721
CAS No.: 20213-65-4
MW: 267.26

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

4. First-aid measures
Descriptions of first-aid measures
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.
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.
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 until 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.
Keep/Store away from clothing/combustible materials.
Exhaust/ventilator
Exhaust/ventilator should be available.
Safety treatments
Avoid contact with skin.
Avoid contact with eyes.
Safety Measures/Incompatibility
Take any precaution to avoid mixing with combustibles/incompatible materials.
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 ... thoroughly after handling.
Wash contaminated clothing before reuse.
9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical properties
- Appearance: Powder
- Color: White
- Odor data N.A.
- pH data N.A.

Phase change temperature
- Initial Boiling Point/Boiling point data N.A.
- Boiling range data N.A.
- Melting point/Freezing point data N.A.
- 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.
- Specific gravity/Density data N.A.

Solubility
- Solubility in water: Easily soluble
- n-Octanol/water partition coefficient data N.A.

10. Stability and Reactivity

Reactivity
- N.A.

Chemical stability
- Stable under normal storage/handling conditions.

Possibility of hazardous reactions
- N.A.

Conditions to avoid
- Contact with fire source.

Incompatible materials
- N.A.

Hazardous decomposition products
- Nitrogen oxides

11. Toxicological Information

Information on toxicological effects
- No Acute toxicity data available
- No Irritant properties data available
- No Allergenic and sensitizing effects data available
- No Mutagenic effects data available
- No Carcinogenic effects data available
- No Teratogenic effects data available
- No reproductive toxicity data available
- No STOT—single/repeated exposure data available
- 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
UN No.: 3085
Proper Shipping Name: OXIDIZING SOLID, CORROSIVE, N.O.S.
Class or division: 5.1
Subsidiary risk(s): 8
Packing group: III
ERG GUIDE No.: 140
Special provisions No.: 223, 274

IMDG Code (International Maritime Dangerous Goods Regulations)
UN No.: 3085
Proper Shipping Name: OXIDIZING SOLID, CORROSIVE, N.O.S.
Class or division: 5.1
Subsidiary risk(s): 8
Packing group: III
Special provisions No.: 223, 274

IATA Dangerous Goods Regulations
UN No.: 3085
Proper Shipping Name: OXIDIZING SOLID, CORROSIVE, N.O.S.
Class or division: 5.1
Subsidiary risk(s): 8
Hazard labels: Oxidizer & Corrosive
Packing group: III

Environmental hazards
MARPOL Annex III – Prevention of pollution by harmful substances
Marine pollutants (yes/no): no

15. Regulatory Information
Safety, health and environmental regulations/legislation specific for the substance or mixture
US major regulations
TSCA
Zirconium oxynitrate,2–hydrate
Other regulatory information
Ensure this material in compliance with federal requirements and ensure conformity to local regulations.
16. Other information

GHS classification and labelling

Ox. Sol. 3: H272 May intensify fire; oxidizer
Skin Corr. 1C: H314 Causes severe skin burns and eye damage

Reference Book

- Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN
- Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN
- IMDG Code (Amendment 38–16) 2016
- IATA Dangerous Goods Regulations (59th Edition) 2018
- Classification, labelling and packaging of substances and mixtures (table3–1 ECNO6182012 2016)
- EMERGENCY RESPONSE GUIDEBOOK (US DOT) 2018
- 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 is advised to make their own tests to determinate 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 2017).