

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name: HiSiv-3000 POWDER

Product Use: Adsorbent

UNION SHOWA K.K.

HEAD OFFICE

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YOKKAICHI PLANT

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Emergency Assistance – 24 hour Emergency Telephone Numbers:

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2. HAZARDS IDENTIFICATION

Emergency Overview:

Repeated or prolonged exposure may irritate eyes, skin and respiratory system. When first wetted, the product can heat up to the boiling point of water. Flood with water to cool material.

Form: Powder

Color: Off-white

Potential Health Effects:

Primary Routes of Exposure: Contact with skin and eyes. Exposure may also occur via inhalation or ingestion if product dust is generated.

Skin Contact: May cause skin irritation. The product gets hot as it first adsorbs water.

Eye Contact: Dust and /or product may cause eye discomfort and/or irritation seen as tearing and reddening.

Ingestion: The product gets hot as it first adsorbs water. Burns to moist body tissues can result if contact is prolonged.

Inhalation: Exposure to dust particles generated from this material may cause irritation of the respiratory tract.

Chronic Effects: Prolonged or repeated inhalation of dust generated from this material may cause lung injury.

GHS Classification of Aluminum oxide (non-fibrous)

Physical Hazards

Flamable solids	: Not applicable
Pyrophoric solids	: Not applicable
Self-heating substances and mixtures	: Not applicable
Substances and mixture which, in contact with water, emit flammable gases	: Not applicable
Oxidizing solids	: Not applicable

Health Hazards

Acute toxicity(oral)	: Not applicable
Carcinogenicity	: Not applicable
Reproductive toxicity	: Not classified
Specific target organ toxicity; single exposure	: Category 3 (respiratory tract irritation)
Specific target organ toxicity; repeated exposure	: Category 1 (lung; Inhalation)

Environmental Hazards

Aquatic toxicity (acute)	: Not classified
Aquatic toxicity (chronic)	: Not classified

Hazards without mentions are categorized as 'not classify' or 'classification not possible'.

GHS Label Elements Including Precautionary Statements

Symbol :



Signal Word : Danger

Hazard Statements: May cause respiratory irritation

Obstacle of organ (lung; Inhalation) by long term or repeated exposure

[Prevention]

- Use only outdoors or in a well-ventilated area.
- Do not breathe dust / fume / mist.
- Do not eat, drink or smoke when using this product.
- Wash hands thoroughly after handling.

[Response]

- Get medical advice / attention if you feel unwell.
- If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

[Storage]

- Store in a dry space. Keep container tightly closed in the locked place.

[Disposal]

- Dispose of contents / container to waste in accordance with local / regional / national / international regulations (to be specified).

GHS Classification of Silicon oxide (synthetic) and Sodium oxide
Classification not possible

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture	Mixture
Chemical (Common) name	Synthetic Zeolite (CAS No1318-02-1)
Another name	Sodium Aluminosilicate
Component and content	Synthetic zeolite is a mixture of SiO_2 , Al_2O_3 and Na_2O . The mixture itself has its own crystal structure and characteristic properties, and does not show any properties of each component. The amount of each component (as oxide) is shown in the next Table 'Component and Content'.
Chemical Formula (Synthetic Zeolite)	$\text{M}_{2/n}\text{O} \cdot \text{Al}_2\text{O}_3 \cdot x\text{SiO}_2$ (M: Na, n: atomic value of M, x: integer)
Hazardous ingredients	-
Hazardous impurities	-

Table: Component and content

<u>Component</u>	<u>Content</u> (%Weight)	<u>Reference No</u> (JCSCL)	<u>CAS No</u>	<u>TSCA No</u> (+: listed)	<u>EINECS</u> <u>No</u>
Silicon oxide (synthetic)	<100	(1)-548	7631-86-9	+	231-545-4
Aluminum oxide (non-fibrous)	<40	(1)-23	1344-28-1	+	215-691-6
Water	<10	N.E.	7732-18-5	+	231-791-2
Sodium oxide	<5	(1)-495	1313-59-3	+	215-208-9

Zeolite has EINECS No as 215-283-8.

JCSCL: Japanese Chemical Substance Control Law

Reference Number: Reference Number in Gazetted List in Japan TSCA :

Toxic Substances Control Act, Chemical Substances Inventory

EINECS : European Inventory of Existing Commercial Chemical Substances

4. FIRST AID MEASURES

Eye contact: Flush immediately with plenty of water for at least 15 minutes. If eye irritation persists, consult a physician.

Skin contact: Wash off with soap and plenty of water. if skin irritation persists, call a physician.

After Inhalation: Remove the victim into fresh air. If symptoms persist, call a physician.

After ingestion: Drink at least 2 glasses of water. Obtain medical attention. Never give anything by mouth to an unconscious person.

Notes to physician: This product is a desiccant and generates heat as it adsorbs water. The used Product can retain material of a hazardous nature. identify that material and treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: Non-combustible. Use extinguishing media for surrounding fire.

Unsuitable extinguishing media: N.A.

Fire and explosion hazards: The product itself does not burn. The used product can retain material of a hazardous nature. identify that material and inform the fire fighters.

Special protective equipment: In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit.

Flash point: N.A.

6. ACCIDENTAL RELEASE MEASURE

Personal protection: See Section 8.

Environmental precautions: No special environmental precautions required.

Clean-up: Sweep, shovel or vacuum spilled product into appropriate containers (do not use a vacuum if material has contacted a hydrocarbon material). Pick-up and arrange disposal without creating dust. Never use spilled product.

Spilled product should be disposed of in accordance with all applicable government regulations.

7. HANDLING AND STORAGE

Handling: Handle and open container with care. Avoid formation of dust particles. Avoid contact with eyes.

Storage: Store in original container. Keep in a dry place,

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures: Where natural ventilation is inadequate, especially in confined areas, use mechanical ventilation, other engineering controls or respiratory protection to prevent Inhalation of product dust.

Permissible exposure limit

<u>INGREDIENT</u>	<u>JSOH</u> <u>OEL</u> (2013)	<u>ACGIH</u> <u>TLV-TWA</u> (2013)	<u>OSHA</u> <u>PEL-TWA</u> (2004)	<u>UNITS</u>
Silicon oxide (synthetic)	8(TP) 2(RD)	N.E.	15(TD) 5(R)	mg/m ³
Aluminum oxide (non-fibrous)	2(TP) 0.5(RD)	1(R)	15(TD) 5(R)	mg/m ³
Sodium oxide	8(TP) 2(RD)	N.E.	N.A.	mg/m ³

JSOH: Japan Society Occupational Health

ACGIH: American Conference of Governmental Industrial Hygienists OSHA:

U.S. Occupational Safety and Health Administration

OEL: Occupational Exposure Limit

TLV-TWA: Threshold Limit Value for the Time Weighted Average PEL-

TWA: Permissible Exposure Limit or Time Weighted Average

Abbreviations:

N.A.	-Not Applicable	N.E.	-None Established	SC	-Soluble Compounds
RD	-Respirable Dust	TD	-Total Dust	FuD	-Fume and Dust
FU	-Fume	I	-Inhalable	R	-Respirable
IS	-Insoluble				

Personal protection equipment: Handle in accordance with good industrial hygiene and safety practice.**Eye protection:** Safety glasses or goggles.**Hand protection:** Protective gloves.**Skin and body protection:** Work uniform and gloves to prevent prolonged contact.**Respiratory protection:** In case of insufficient ventilation wear suitable respiratory equipment with filter classification: N-95 or if oil/liquid aerosols P-95 (42 CFR 84).**9. PHYSICAL AND CHEMICAL PROPETIES**

These data do not represent technical or sales specifications.

Form: Powder**Odor:** None**Boiling point/range:** N.A.**Flash point:** N.A.**Bulk density:** N.D.**Vapor pressure:** N.A.**Viscosity:** N.A..**Color:** Off-white**pH:** 4-11**Melting point/range:** N.A.**Autoignition temperature:** N.A.**Explosion limits:** N.A.**Vapor density:** N.A**Water solubility:** N.D.

Abbreviations:

N.D. - Not Determined

N.A. - Not Applicable

10. STABILITY

Stability: Stable.

Hazardous decomposition products: No decomposition if used as directed. Hydrocarbons and Other materials that contact the product during normal use can be retained on the product. it is Reasonable to expect that decomposition products will come from these retained materials of use.

Conditions/Materials to avoid: Sudden contact with high concentrations of chemicals having high heats of adsorption such as olefins, HCl, etc. When first wetted, the product can heat up to the boiling point of water. Flood with water to cool material.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

(Mixture)

LD50/oral/rat: > 32000 mg/kg *

LD50/dermal/rabbit: > 2000 mg/kg *

LC50/inhalation/rat: No data available.

(Aluminum oxide)

LD50/oral/rat: > 5 000 mg/kg (IUCLID(2000))

Routes of exposure: Exposure may occur via inhalation, contact with skin and eyes.

Irritation:

(Mixture)

Skin (rabbit): Not classified as a skin irritant in animal testing. * Eye

(rabbit): Not classified as a skin irritant in animal testing. * **(Aluminum oxide)**

Skin (rabbit): Not classified as a skin irritant in animal testing. * Eye

(rabbit): Classified as a slight eye irritant in animal testing. *

Specific target organ toxicity; single exposure:

(Aluminum oxide)

Classified as a upper airway irritant (ICSC (2000))

Specific target organ toxicity; repeated exposure:

(Aluminum oxide)

Pulmonary Fibrosis, caused by occupational exposure of Aluminum oxide, has been reported (EHC (1999)).

Chronic toxicity

Repeated or prolonged exposure for dust / fume / mist of this product may irritate eyes, skin and respiratory system.

Carcinogenicity Classification:**Japan Society for Occupational Health (JSOH):**

Neither the product nor the components are classified.

International Agency for Research on Cancer (IARC):

Silicon oxide (synthetic) - Unclassifiable as to carcinogenicity in humans (Group3).

U.S. National Toxicology Program (NTP):

Neither the product nor the components are classified.

U.S. Occupational Safety and Health Administration (OSHA):

Neither the product nor the components are classified or regulated .

American Conference of Governmental Industrial Hygienists (ACGIH):

Aluminum oxide - Not Classifiable as a Human Carcinogen (A4).

Mutagenic Classification:**(Mixture)**

EC Mutagenic: Not listed.

EC Toxic for Reproduction: Not listed.

(Aluminum oxide)

Ames test: negative

Additional product information:

* The toxicological data has been taken from products of similar composition.

Additional component information:

No data available.

IUCID: International Uniform Chemical Information Database ICSC:

International Chemical Safety Card

EHC: Environmental Health Criteria

12. ECOLOGICAL INFORMATION

Mobility:

No data available.

Biodegradation:

No data available.

Bioaccumulation:

No data available.

Aquatic toxicity:

No data available.

Further information:

No information available.

13. DISPOSAL CONSIDERATIONS

Remainder container:

The container is disposed of appropriately according to the standard of related regulations and the local government.

Materials of a hazardous nature that contact the product during normal use may be retained on this product. The user of the product must identify the hazards associated with the retained material in order to assess the waste disposal options. The product is a desiccant and used product may generate heat as it adsorbs water and moisture, and the slurry shows pH: 4-11.

After danger and the hazardous properties are noticed thoroughly to waste treatment company, processing is consigned.

Pollution Container and packing:

The container is disposed of appropriately according to the standard of related regulations and the local government. Remove contents completely when you abandon an empty container.

14. TRANSPORT INFORMATION

International regulation

UN-No.: N.A.

Proper shipping name: N.A.

Packing group: N.A.

Transport Mode	Class	Additional Information	Remarks
U.S. DOT:	Not regulated.	Reportable: N.A. Quantity: Marine Pollutant DOT: No	N.A.
ADR/RID:	Not regulated.	Danger Code: N.A.	N.A.
IMDG:	Not regulated.	Marine pollutant: No EmS: N.A.	N.A.
IATA:	Not regulated.	Instr.Passenger: N.A. Instr.Cargo: N.A.	N.A.

Regulation in Japan

Fire Service Law	Not regulated.
Poisonous and Deleterious Substances Control Act	Not regulated.
High Pressure Gas Safety Act	Not regulated.
Ship Safety Act	Not regulated.

15. REGULATORY INFORMATION

Japan

Waste Management and Public Cleansing Act

Materials of a hazardous nature that contact the product during use may be retained on this product, the materials may be regulated.

Industrial Safety and Health Not regulated.

Law

Pollutant Release and Not regulated.

Transfer Register

Poisonous and Deleterious Not regulated.

Substances Control Act

United States

Toxic Substances Control Act (TSCA): All the ingredients of this mixture are registered on the TSCA Chemical Substance Inventory.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) Reportable Quantity: The following component(s) of this product is/are subject to release reporting under 40 CFR 302 when release exceeds the Reportable Quantity (RQ):

--None--

SARA Title III (Superfund Amendments and Reauthorization Act of 1986): Section 302 (Extremely Hazardous Substances):

The following component(s) of this product is/are subject to the emergency planning provisions of 40 CFR 355 when there are amounts equal to or greater than the Threshold Planning Quantity (TPQ):

--None--

Section 313 (Toxic Chemicals):

The following component(s) have been specified as Toxic Chemicals under SARA Section 313 and may be subject to the Toxic Release Inventory (TRI) reporting requirements under 40 CFR 372:

--None--

The following components are listed in U.S. State Regulations:

State Reg Reference:

California - Proposition 65:

Component(s)

None.

Massachusetts Right-To-Know:

Amorphous silica
Aluminum oxide

New Jersey Right-To-Know:

Silica, Amorphous
Aluminum oxide

Pennsylvania Right-To-Know:	Silica
	Aluminum oxide

Note: Other U.S. State Regulations may exist, check your local sources.

Canada

Canadian Hazardous Products Act:

This product is not classified as a controlled product under regulations pursuant to the Federal Hazardous Product Act (e.g. WHMIS).

Canadian Environmental Protection Act:

All the ingredients of this mixture are notified to CEPA and on the DSL (Domestic Substances List).

European Union (EU)

European inventory of Existing Commercial Chemical Substances: All components of this product are included in EINECS/ELINCS.

Council of European Communities Directive on Classification, Packaging and Labeling of Dangerous Substances/Preparation (67/548/EEC & 1999/45/EC, as amended):

No Dangerous Goods Label Required.

Additional Governmental Inventories

Australia-Inventory of Chemical Substances (AICS): All the ingredients of this mixture appear on the AICS.

Japan-Existing and New Chemical Substances(ENCS): All the ingredients of this mixture appear on the ENCS.

China: All the ingredients of this mixture appear on the China Inventory.

Korea- Existing and Evaluated Chemical Substances (ECL): All the ingredients of this mixture appear on the ECL.

Philippines- Inventory of Chemicals and Chemical Substances (PICCS): All the ingredients of this mixture appear on the PICCS.

16. OTHER INFORMATION

This SDS conforms to the order of contents and headings; JIS (Japanese Industrial Standards) Z 7253:2012. The data and recommendations presented in this data sheet concerning the use of our product and the materials contained therein are believed to be accurate and are based on information which is considered reliable as of the date hereof. However, the customer should determine the suitability of such materials for his purpose before adopting them on a commercial scale. Since the use of our products by others is beyond our control, no guarantee, express or implied, is made and no responsibility assumed for the use of this material or the results to be obtained therefrom. Information on this form is furnished for the purpose of compliance with Government Health and Safety Regulations and shall not be used for any other purposes. Moreover, the recommendations contained in this data sheet are not to be construed as a license to operate under, or a recommendation to infringe, any existing patents, nor should they be confused with state, municipal or insurance requirements, or with national safety codes.

References

- SDS edited by UOP (our parents company) Health, Safety & Environmental Department
- National Institute of Technology and Evaluation – Data Base
- JSOH OELs (2013)
- ACGIH TLVs and BEIs 2013
- OSHA 29CFR 1910 Subpart Z - Toxic and Hazardous Substances (2004)