Date of issue: 2021/03/01
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Safety Data Sheet

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

Product identifier:
Product name: Aluminium, granular
SDS No. : 02283E-2
Relevant identified uses of the substance or mixture and uses advised against
Research and Development
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

Section 2. Hazards identification

GHS classification and label elements of the product
Classification of the substance or mixture
HEALTH HAZARDS
Specific target organ toxicity - single exposure: Category 1 (respiratory system)
Specific target organ toxicity - repeated exposure: Category 1 (respiratory system)
(Note) GHS classification without description: Not classified/Classification not possible
Label elements

Signal word: Danger
HAZARD STATEMENT
H370 Causes damage to organs (respiratory system)
H372 Causes damage to organs through prolonged or repeated exposure (respiratory system)
PRECAUTIONARY STATEMENT
Prevention
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash contaminated parts thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
Response
P314 Get medical advice/attention if you feel unwell.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor/physician.
Storage
P405 Store locked up.
Disposal
P501 Dispose of contents/container in accordance with local/national regulation.
Specific adverse human health effects
See "11. Toxicological Information".

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name	Content (%)	CAS No.	ENCS	Chemical formula
Aluminium	≧99	7429-90-5	-	Al

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

Impurities

Iron ≦0.25% (CAS No.7439-89-6)
Silicon ≦0.20% (CAS No.7440-21-3)
Copper ≦0.040% (CAS No.7440-50-8)
Zinc ≦0.040% (CAS No.7440-66-6)
Manganese ≦0.030% (CAS No.7439-96-5)
Magnesium ≦0.030% (CAS No.7439-95-4)
Chromium ≦0.030% (CAS No.7440-47-3)
Titanium ≦0.030% (CAS No.7440-32-6)

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

IF ON SKIN

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

Section 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

Fire may produce irritating, corrosive and/or toxic gases.
Runoff from fire control or dilution water may cause pollution.
See "10.Stability and Reactivity".

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 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.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses, low areas or rivers. To be careful not discharged to the environment without being properly handled waste water contaminated.

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.

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.

(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.

Wash hands et al thoroughly after handling.

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.

Storage

Conditions for safe storage

Keep container tightly closed.

Store locked up. (P405)

Store in a cool, dry place. Do not store in direct sunlight.

Storage in accordance with local/national regulation.

Container and packaging materials for safe handling

Use closed unbreakable containers.

Section 8. Exposure controls/personal protection

Control parameters

Control value and Concentration standard value

(Manganese)

Japan control value 0.05mg-Mn/m3

Adopted value

The Japan Society for Occupational Health

(Aluminium)

Class 1 of dust: Respirable dust 0.5mg/m3; Total dust 2mg/m3

(Manganese)

0.02mg-Mn/m3 (respirable dust); 0.1mg-Mn/m3 (total dust)

(Chromium)

0.5mg/m3

ACGIH

(Aluminium)

TWA: 1mg/m3(R) (Pneumoconiosis; LRT irr; neurotoxicity)

(Copper)

TWA: 0.2mg-Cu/m3(Fume); TWA: 1mg-Cu/m3(Dusts and mists) (Irr; GI; metal fume fever)

(Manganese)

TWA: 0.02mg-Mn/m3(R); TWA: 0.1mg-Mn/m3(I) (CNS impair)

(Chromium)

TWA: 0.5mg-Cr(0)/m3(I) (Resp tract 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

Recommend to use protective equipment in conformity with the standards.

Use appropriate protective equipment in accordance with local/national regulation.

Respiratory protection

Wear respiratory protection (dust-proof mask/gas mask). Select chemical cartridge corresponding to type of gases when using a gas mask.

Hand protection

Wear impervious protective glove.

Eye protection

Wear eye/face protection. Wear safety goggles in cases gas is generated.

Skin and body protection

Wear protective clothing.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Granular

Color: Silver to silvery white

Odor 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) 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: Insoluble
Solubility in solvent data is not available.
n-Octanol/water partition coefficient data is not available.
Vapor pressure data is not available.
Density and/or relative density data is not available.
Relative vapor density (Air=1) data is not available.
Particle characteristics data is not available.
Other information
Other information is not available.

Section 10. Stability and Reactivity

Reactivity
Not available.
Chemical stability
Stable under normal storage/handling conditions.
Blockish aluminum forms an oxide coating in the air, and the surface is protected.
Possibility of hazardous reactions
(As aluminium, powder)
Ignites in air when finely divided. Dust explosion possible if in powder or granular form, mixed with air.
Reacts with water and alcohols. Reacts violently with oxidants, strong acids, strong bases, chlorinated hydrocarbons and halogens. This generates fire and explosion hazard. (ICSC 0988)
Conditions to avoid
Contact with fire source.
Incompatible materials
Not available.
Hazardous decomposition products
Not available.

Section 11. Toxicological Information

Information on toxicological effects
Acute toxicity
Acute toxicity (Oral)
[Data for components of the product]
[NITE-CHRIP]
(Silicon)

rat LD50: 3160 mg/kg (source: NITE)
(Zinc)
rat LD50: > 2000 mg/kg (source: NITE)
(Manganese)
female rat LD50: > 2000 mg/kg (source: NITE)

Acute toxicity (Inhalation)

[Data for components of the product]
[NITE-CHRIP]
(Zinc)
dust/mist: rat LC50: 5410 mg/m3 (OECD TG 403) (source: NITE)
(Manganese)
dust: rat LC50: > 5.14 mg/L (4-hour) (source: NITE)

Irritant properties

Skin corrosion/irritation

[Data for components of the product]
[NITE-CHRIP]
(Magnesium)
Category 2 (source: NITE)

Serious eye damage/irritation

[Data for components of the product]
[NITE-CHRIP]
(Silicon)
Category 2B (source: NITE)
(Zinc)
Category 2B (source: NITE)
(Magnesium)
Category 2A (source: NITE)
(Chromium)
Category 2 (source: NITE)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenicity

[Data for components of the product]
[IARC]
(Chromium)
Group 3 : Not classifiable as to its carcinogenicity to humans
[ACGIH]
(Aluminium)
A4: Not Classifiable as a Human Carcinogen
(Manganese)
A4(as Mn): Not Classifiable as a Human Carcinogen

Reproductive toxicity data is not available.

Specific target organ toxicity (STOT)

STOT-single exposure

[Product]
Category 1, Causes damage to organs

[Data for components of the product]
[NITE-CHRIP]
(Aluminium)
Category 1 (respiratory system) (source: NITE)

(Copper)
Category 3 (Respiratory tract irritation) (source: NITE)
(Magnesium)
Category 3 (Respiratory tract irritation) (source: NITE)
(Chromium)
Category 3 (Respiratory tract irritation) (source: NITE)
[Company proprietary data]
(Iron)
Category 3 (Respiratory tract irritation)

STOT-repeated exposure
[Product]
Category 1, Causes damage to organs through prolonged or repeated exposure
[Data for components of the product]
[NITE-CHRIP]
(Aluminium)
Category 1 (respiratory system) (source: NITE)

Aspiration hazard data is not available.

Section 12. Ecological Information

Toxicity
Aquatic toxicity
[Data for components of the product]
Hazardous to the aquatic environment, short-term (acute)
[NITE-CHRIP]
(Zinc)
Algae (Pseudokirchneriella subcapitata) 72-hour ErC50: 0.15 mg/L (source: NITE)
(Manganese)
Algae (Desmodesmus subspicatus) 72-hour ErC50: 4.5 mg/L (source: NITE)
Hazardous to the aquatic environment, long-term (chronic)
[NITE-CHRIP]
(Manganese)
Crustacea (Ceriodaphnia dubia) 8-day NOEC: 1.7 mg/L (source: NITE)

Water solubility
(Aluminium)
reaction (source: ICSC, 2019)
(Silicon)
none (source: ICSC, 2003)
(Copper)
none (source: ICSC, 2016)
(Zinc)
reaction (source: ICSC, 2019)
(Manganese)
none (source: ICSC, 2003)
(Magnesium)
reaction (source: ICSC, 2019)
(Chromium)
none (source: ICSC, 2004)

Persistence and degradability
[Data for components of the product]

(Zinc)
Not rapidly degradable (source: NITE)

Bioaccumulative potential

[Data for components of the product]
(Copper)
log Pow: -0.57 (calculated value) (source: ICSC, 2016)

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 as industrial waste. Accordance with local/national regulation.

Section 14. Transport Information

UN Number or ID Number : Not regulated

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : Not regulated

IATA (Dangerous Goods Regulations)

UN Number or ID Number : Not regulated

Environmental hazards

Marine pollutants (yes/no) : no

Section 15. Regulatory Information

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

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

Chemicals listed in TSCA Inventory

Copper; Aluminium; Iron; Magnesium; Manganese; Silicon; Titanium; Chromium; Zinc

Other regulatory information

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

Section 16. Other information

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
2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2025 TLVs and BEIs. (ACGIH)
JIS Z 7252 : 2019
JIS Z 7253 : 2019

2024 Recommendation on TLVs (JSOH)
Supplier's data/information

General Disclaimer

Please provide SDS to customers for selling or transferring.
All chemicals have unknown hazard. Handle the product with care.
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 Data published in Japan (National Institute of Technology and Evaluation (NITE) Chemical Risk Information Platform (NITE-CHRIP), up to FY2023).