Date of issue: 18/05/2018
Date of revision: 19/03/2020

Safety Data Sheet

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

Product identifier:

Product name: GR nitrate reagent

SDS No. : 3555E-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: 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

HEALTH HAZARDS

Serious eye damage/eye irritation: Category 2

Skin sensitization: Category 1

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 2

Hazardous to the aquatic environment (Long-term): Category 2

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

Label elements

Signal word: Warning

HAZARD STATEMENT

Causes serious eye irritation

May cause an allergic skin reaction

Toxic to aquatic life

Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

Avoid release to the environment.

Avoid breathing dust/fume/gas/mist/vapors/spray.

Wash contaminated parts thoroughly after handling.

Wear protective gloves.

Contaminated work clothing should not be allowed out of the workplace.

Wear eye protection/face protection.

Response

Collect spillage.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

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.

Disposal

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

3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name:1-Naphthylamine
Content (%):8.0
Chemical formula:C10H9N
Chemicals No, Japan:4-321
CAS No.:134-32-7
MW:143.2
ECNO:205-138-7

Ingredient name:Sulfanilic acid
Content (%):80
Chemical formula:C6H7NO3S
Chemicals No, Japan:3-1971
CAS No.:121-57-3
MW:173.19
ECNO:204-482-5

Ingredient name:Zinc
Content (%):11
Chemical formula:Zn
CAS No.:7440-66-6
MW:65.409
ECNO:231-175-3

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

Impurities and stabilizing additives

Impurities:
Zinc oxide 0.56% (CAS No.1314-13-2)
Lead 0.024% (CAS No.7439-92-1)
Cadmium 0.012 (CAS No.7440-43-9)

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.
Wash with plenty of soap and water.
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 or doctor/physician if you feel unwell.

5. Fire-fighting measures
Extinguishing media
Suitable extinguishing media
Use appropriate extinguishing media suitable for surrounding facilities.
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/flame resistant/retardant clothing.
Wear protective gloves/protective clothing/eye protection/face protection.
Firefighters should wear self-contained breathing apparatus with full face peace 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.
Environmental precautions
Prevent spills from entering sewers, watercourses or low areas.
Avoid raising dust.
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)
Avoid breathing dust/fume/gas/mist/vapors/spray.
(Protective measures against fire and explosion)
Keep away from heat/sparks/open flames/hot surfaces. - 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.
Contaminated work clothing should not be allowed out of the workplace.
Take off contaminated clothing and wash it before reuse.

Storage
Conditions for safe storage
Keep container tightly closed.
Store in a cool, dry place. Do not store in direct sunlight.
Container and packaging materials for safe handling
Glass

8. Exposure controls/personal protection

Control parameters
Adopted value
(Zinc oxide)
ACGIH(2001) TWA: 2mg/m3(R)
STEL: 10mg/m3(R) (Metal fume fever)
(Lead)
ACGIH(1991) TWA: 0.05mg-Pb/m3 (CNS & PNS imp; hematologic eff)
(Cadmium)
ACGIH(1990) TWA: 0.01mg-Cd/m3; 0.002mg-Cd/m3(R) (Kidney dam)
OSHA-PEL
(Zinc oxide)
TWA: 5mg/m3 (Zinc oxide fume)
TWA: 15mg/m3 (Zinc oxide_Total dust);
5mg/m3 (Zinc oxide_Respirable fraction)
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.

9. Physical and Chemical Properties

Information on basic physical and chemical properties
Physical state: Powder
Color: Pale purple to grey
Odor: Characteristic odor
pH data is not available.
Boiling point or initial boiling point data is not available.
Boiling range data is not available.
Melting point/Freezing point data is not available.
Decomposition temperature data is not available.
Flammability (gases, liquids and solids) data is not available.
Flash point data is not available.
Auto-ignition temperature data is not available.
Lower and upper explosion limit/flammability limit data is not available.
Vapor pressure data is not available.
Relative vapor density (Air=1) data is not available.
Density and/or relative density data is not available.

Kinematic viscosity data is not available.
Solubility:
Solubility in water: Insoluble
n-Octanol/water partition coefficient data is not available.
No 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

(1-Naphthylamine)
Decomposes on burning. This produces nitrogen oxides and carbon monoxide. The substance is a weak base. (ICSC 0518)
(Sulfanilic acid)
Decomposes on heating at 288° C, on burning and on contact with strong acids. This produces toxic fumes including nitrogen oxides and sulfur oxides. Reacts violently with strong bases. (ICSC 0569)
(Zinc)
Ignites in air when finely divided. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.
On combustion forms zinc oxide fumes. See Notes. The substance is a strong reducing agent. It reacts violently with oxidants, acids and bases. Reacts with water. This produces flammable/explosive gas (hydrogen). Reacts violently with sulfur, halogenated hydrocarbons and many other substances. This generates fire and explosion hazard. (ICSC 1205)
(Zinc oxide)
Reacts violently with aluminium powder, magnesium powder and chlorinated rubber (on heating). This generates fire and explosion hazard. (ICSC 0208)
(Lead)
Upon heating, toxic fumes are formed. Reacts with strong oxidants and strong acids. This generates toxic, fire and explosion hazard. (ICSC 0052)
(Cadmium)
Dust explosion possible if in powder or granular form, mixed with air.
Reacts with acids. This produces flammable/explosive gas (hydrogen). The dust reacts with oxidants, hydrogen azide, zinc, selenium and tellurium. This generates fire and explosion hazard. (ICSC 0020)

Conditions to avoid

Contact with incompatible materials.
Contact with fire source.

Incompatible materials

Acids, Bases, Oxidizing agents, Sulfur, Halogenated hydrocarbons, Hydrogen azide, Selenium, Tellurium

Hazardous decomposition products

Carbon oxides, Sulfur oxides, Nitrogen oxides, Zinc oxide, Hydrogen

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(1-Naphthylamine)

rat LD50＝680mg/kg (HSDB, 2005)

(Cadmium)

rat LD50=1140mg/kg (PATTY, 2001)

Acute toxicity (Dermal)

[GHS Cat. Japan, base data]

(1-Naphthylamine)

rat LD50＝447mg/kg (IUCLID, 2000)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

(Cadmium)

mist: rat LC50=0.0031mg/L (RTECS, 2005)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Zinc oxide)

rabbit no dermal reactions (EU-RAR, 2004)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Sulfanilic acid)

rabbit moderate irritation (IUCLID, 2000)

(Zinc oxide)

rabbit no/slight irritant (EU-RAR, 2004)

(1-Naphthylamine)

rabbit mild irritation (IUCLID, 2000 et al)

(Zinc)

rabbit mild irritation (NITE primary risk assessment, 2007)

Sensitization

Skin sensitization

[GHS Cat. Japan, base data]

(Sulfanilic acid)

cat. 1; IUCLID, 2000

Mutagenic effects data is not available.

Carcinogenicity

(1-Naphthylamine)

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

(Lead)

IARC-Gr.2B : Possibly carcinogenic to humans

(Cadmium)

IARC-Gr.1 : Carcinogenic to humans

(Cadmium)

ACGIH-A2(1990) : Suspected Human Carcinogen

(Lead)

ACGIH-A3(1991) : Confirmed Animal Carcinogen with Unknown Relevance to Humans

(Cadmium)

EU-Category 1B; Substances presumed to have carcinogenic potential for humans

Reproductive toxicity

[GHS Cat. Japan, base data]

(Zinc oxide)
cat. 2; rat : EU-RAR, 2004

STOT

STOT-single exposure

[cat.2]

[GHS Cat. Japan, base data]
(1-Naphthylamine)
blood (HSDB, Access on Oct 2005)

STOT-repeated exposure data is not available.

Aspiration hazard data is not 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

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12. Ecological Information

Ecotoxicity

Aquatic toxicity

Toxic to aquatic life
Toxic to aquatic life with long lasting effects

Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]
(Sulfanilic acid)
Fish (fat head minnow) LC50=100.4mg/L/96hr (ECETOC TRI91, 2003)
(Zinc oxide)
Crustacea (Daphnia magna) LC50=0.098mg-Zn/L/48hr (NITE primary risk assessment, 2008)
(Cadmium)
Algae (Pseudokirchneriella subcapitata) ErC50=0.07mg/L/72hr (EU-RAR, 2003)
(Zinc)
Algae (Pseudokirchneriella subcapitata) ErC50=0.15mg/L/72hr (EHC 221, 2001)

Aquatic chronic toxicity component(s) data

[GHS Cat. Japan, base data]
(Zinc oxide)
Algae (Pseudokirchneriella subcapitata) NOEC=0.024mg-Zn/L/72hr (0.0299mg-ZnO/L/72hr) (EU-RAR, 2010)
(Cadmium)
Fish (Salvelinus fontinalis) NOEC=0.008mg/L/10days (EU-RAR, 2003)

Water solubility

(Sulfanilic acid)
poor (ICSC, 2005)
(Zinc oxide)
none (ICSC, 2004)
(1-Naphthylamine)
none (ICSC, 2000)
(Lead)
none (ICSC, 2002)
(Cadmium)
none (ICSC, 2005)
(Zinc)
reaction (ICSC, 1994)

Persistence and degradability

(Sulfanilic acid)
Not degrade rapidly (BOD_Degradation : 3% (CSCL DB, 1998))

Bioaccumulative potential
(Sulfanilic acid)
log Kow=-2.16 (PHYSPROP Database, 2018)
(Zinc oxide)
BCF=217 (Check & Review, Japan)
(1-Naphthylamine)
log Pow=2.25 (ICSC, 2000)
Mobility in soil
Mobility in soil data is not available.
Other adverse effects
Ozone depleting chemical data is not available.

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 (- if this is not the intended use).
Dispose of contents/container in accordance with local/national regulation.

14. Transport Information

UN No.: 3077
Proper Shipping Name :
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Class or division : 9
Packing group : III
ERG GUIDE No.: 171
Special provisions No.: 274; 331; 335; 375

IMDG Code (International Maritime Dangerous Goods Regulations)
UN No.: 3077
Proper Shipping Name :
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Class or division : 9
Packing group : III
Special provisions No.: 274; 335; 966; 967; 969

IATA Dangerous Goods Regulations
UN No.: 3077
Proper Shipping Name :
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Class or division : 9
Hazard labels : Miscellaneous & Environmentally hazardous
Packing group : III
Special provisions No.: A97; A158; A179; A197

Environmental hazards
MARPOL Annex III - Prevention of pollution by harmful substances
Marine pollutants (yes/no) : yes
MARPOL Annex V - Prevention of pollution by garbage discharge
Hazardous to the aquatic environment - long-term hazard: cat.1, 2
Zinc , Zinc oxide , Cadmium

15. Regulatory Information

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

US major regulations

Chemicals listed in TSCA Inventory

Sulfanilic acid; 1-Naphthylamine; Zinc oxide; Cadmium; Lead; Zinc

Other regulatory information

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

16. Other information

GHS classification and labelling

Eye Irrit. 2: H319 Causes serious eye irritation

Skin Sens. 1: H317 May cause an allergic skin reaction

Aquatic Acute 2: H401 Toxic to aquatic life

Aquatic Chronic 2: H411 Toxic to aquatic life with long lasting effects

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (6th ed., 2015), UN Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN

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

IATA Dangerous Goods Regulations (60th Edition) 2019

Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012)

2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2019 TLVs and BEIs. (ACGIH)

http://monographs.iarc.fr/ENG/Classification/index.php

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 2018).