

SAFETY DATA SHEET

1. Identification of the substance or mixture and of the supplier

- A. GHS product identifier Mirinae[®] A-1000D Alumina Powder
- B. Recommended use of the chemical and restrictions on use
Recommended use Cosmetic
Restrictions on use Not available
- C. Manufacturers
Company name CQV Co., Ltd.
Address 144, Seongjung-Ro, Jincheon-Eup, Jincheon-Gun, Chungbuk-Do, Korea
Emergency phone number 82-43-531-2500
Respondent Byung-Ki Choi
Fax 82-43-536-0314

2. Hazards identification

- A. GHS classification of the substance/mixture
Not classified
- B. GHS label elements, including precautionary statements
Pictogram and symbol : Not applicable
Signal word : Not applicable
Hazard statements : Not applicable
Precautionary statements
Precaution : Not applicable
Treatment : Not applicable
Storage : Not applicable
Disposal : Not applicable
- C. Other hazard information not included in hazard classification (NFPA)
Health 0
Flammability Not available
Reactivity Not available

3. Composition/information on ingredients

Chemical Name (INCI Name)	CAS number	EC number	Content (%)
Alumina	1344-28-1	215-691-6	100

4. First aid measures

- A. Eye contact
- In case of contact with substance, immediately flush eyes with running water at least 20 minutes.
- B. Skin contact
- In case of contact with substance, immediately flush skin with running water at least 20 minutes.
- Remove and isolate contaminated clothing and shoes.
- Wash contaminated clothing and shoes before reuse.

- Get immediate medical advice/attention.

C. Inhalation

- Specific medical treatment is urgent.
- Move victim to fresh air.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.

D. Ingestion

- Do not let him/her eat anything, if unconscious.
- Get immediate medical advice/attention.

E. Indication of immediate medical attention and notes for physician

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. Fire fighting measures

A. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media: Dry sand, dry chemical, alcohol-resistant foam, water spray, regular foam, CO₂
- Unsuitable extinguishing media: High pressure water streams

B. Specific hazards arising from the chemical

- If inhaled, may be harmful.

C. Special protective equipment and precautions for fire-fighters

- Dike fire-control water for later disposal; do not scatter the material.
- Move containers from fire area if you can do it without risk.
- Fire involving Tanks: Cool containers with flooding quantities of water until well after fire is out.
- Fire involving Tanks: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Fire involving Tanks: Always stay away from tanks engulfed in fire.

6. Accidental release measures

A. Personal precautions, protective equipment and emergency procedures

- Eliminate all ignition sources.
- Stop leak if you can do it without risk.
- Please note that materials and conditions to avoid.
- Ventilate the area.
- Do not touch or walk through spilled material.
- Prevent dust cloud.

B. Environmental precautions and protective procedures

- Prevent entry into waterways, sewers, basements or confined areas.

C. The methods of purification and removal

- Small Spill; Flush area with flooding quantities of water. And take up with sand or other non-combustible absorbent material and place into containers for later disposal.
- Large Spill; Dike far ahead of liquid spill for later disposal.
- With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

7. Handling and storage

A. Precautions for safe handling

- Please note that materials and conditions to avoid.
- Wash thoroughly after handling.
- Please work with reference to engineering controls and personal protective equipment.
- Be careful to high temperature.

B. Conditions for safe storage

- Store in a closed container.
- Store in cool and dry place.

8. Exposure controls/personal protection

A. Occupational Exposure limits

Korea regulation

TWA = 10 mg/m³

ACGIH regulation

TWA = 10 mg/m³,

(as AI, Total particulate containing no asbestos and < 1% crystalline silica)

Biological exposure index Not available

OSHA regulation

TWA = 15 mg/m³ (total), TWA = 5 mg/m³ (respirable fraction)

NIOSH regulation

TWA = 10 mg/m³

EU regulation Not available

Other

Austria: TWA = 5 mg/m³, STEL = 10 mg/m³

Belgium: TWA = 5 mg/m³ (as AI)

Denmark: TWA = 5 mg/m³ (total, as AI), 2 mg/m³ (respirable, as AI)

Estonia: TWA = 10 mg/m³ (total dust), 4 mg/m³ (respirable dust)

France: TWA = 10 mg/m³

Hungary: TWA = 6 mg/m³ [AK](respirable dust)

Latvia: TWA = 6 mg/m³

Spain: TWA = 10 mg/m³

Australia: TWA = 10 mg/m³

Canada: TWA = 10 mg/m³

China: TWA = 4 mg/m³ (total dust), STEL = 8 mg/m³ (total dust)

Russia: TWA = 6 mg/m³ (aerosol)

B. Appropriate engineering controls

Provide local exhaust ventilation system or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

C. Personal protective equipment

Respiratory protection

- If exposure concentration of the material exceeds the permitted exposure standards, wear a adequate respiratory protection equipment with certificate of Korea Occupational Safety & Health Agency, by considering physicochemical properties of exposed particulate material.
- If exposure concentration of the material is lower than VALUE of the permitted exposure standards, wear a respiratory protective device, of over 10 degree of protection, equipped with an adequate filter by considering physicochemical properties of exposed particulate material ; such as facepiece filtering respirator or respirator equipped with filter.

- If exposure concentration of the particle material is lower than VALUE of the permitted exposure standards, wear a respiratory protective device, of over 25 degree of protection, equipped with an adequate filter by considering physicochemical properties of exposed particulate material ; such as powered air-purifying respirator with a loose-fitting hood/helmet or continuous flow respirator.
- If exposure concentration of the particle material is lower than VALUE of the permitted exposure standards, wear a respiratory protective device, of over 50 degree of protection, equipped with an adequate filter by considering physicochemical properties of exposed particulate material ; such as powered air-purifying respirator with half/full facepiece or continuous flow/pressure-demand supplied-air respirator.
- If exposure concentration of the particle material is lower than VALUE of the permitted exposure standards, wear a respiratory protective device, of over 1,000 degree of protection, equipped with an adequate filter by considering physicochemical properties of exposed particulate material ; such as powered air-purifying respirator with full facepiece or supplied-air respirator with type of full facepiece/hood.
- If exposure concentration of the material is lower than VALUE of the permitted exposure standards, wear a respiratory protective device, of over 10,000 degree of protection, equipped with an adequate filter by considering physicochemical properties of exposed particulate material ; such as pressure-demand supplied-air respirator with type of full facepiece/helmet/hood.

Eye protection

Wear facepiece with goggles to protect.

An eye wash unit and safety shower station should be available nearby work place.

- Wear breathable safety goggles to protect from particulate material causing eye irritation or other disorder.
- An eye wash unit and safety shower station should be available nearby work place.

Hand protection

Wear chemical resistant gloves.

- Wear appropriate protective gloves by considering physical and chemical properties of chemicals.

Body protection

Wear appropriate protective chemical resistant clothing.

- Wear appropriate protective clothing by considering physical and chemical properties of chemicals.

9. Physical and chemical properties

A. Appearance

Description Powder

Color White

B. Odor No odor

C. Odor threshold Not available

D. pH 7 – 11

E. Melting point/freezing point Not available

F. Initial boiling point and boiling range Not available

G. Flash point Not available

H. Evaporation rate Not available

I. Flammability (solid, gas) Not available

J. Upper/lower flammability or explosive limits Not available

K. Vapor pressure Not available

- L. Solubility (ies) Not available
- M. Vapor density Not available
- N. Specific gravity 3.7 – 3.9 g/cm³
- O. Partition coefficient: n-octanol/water Not available
- P. Auto ignition temperature Not available
- Q. Decomposition temperature Not available
- R. Viscosity Not available
- S. Molecular weight 101.96

10. Stability and reactivity

A. Chemical stability and Possibility of hazardous reactions:

- If inhaled, may be harmful.

B. Conditions to avoid:

- Heat, sparks or flames

C. Incompatible materials:

- Combustibles

D. Hazardous decomposition products:

- Not available

11. Toxicological information

A. Information of Health Hazardous

Acute toxicity

Oral : Not classified Rat LD₅₀ > 2000 mg/kg (OECD Guideline 420)

Dermal : Not available

Inhalation : Not classified Rat LC₅₀ > 2.3 mg/L /4hr

Skin corrosion/ irritation : Not classified

In the skin irritation test using rabbit, skin irritation was not observed.(OECD Guideline 404)

Serious eye damage/ irritation : Not classified

The slight erythema was reversible, resolving by 48 hours post administration of the test substance. The scores observed for conjunctival erythema would not lead to a classification under EU-CLP (Regulation (EC) 1272/2008)(OECD Guideline 405).

Respiratory sensitization : Not available

Skin sensitization : Not classified

In the skin sensitisation test using guinea pig, skin sensitisation was not observed.

Carcinogenicity : Not classified

ACGIH A4 Aluminum insoluble compounds

There was no neoplastic effect in the inhalation exposed rats. (NOAEC(AI₂O₃ dust) = 50 mg/m³ air) (similar to OCED Guideline 413)

KOREA-ISHL, IARC, NTP, OSHA, EU Regulation 1272/2008 : Not listed

Mutagenicity : Not classified

In the mammalian erythrocyte micronucleus test, the results were positive for the nano-sized materials(below 40nm) with evidence of a positive dose-response relationship for MN(OECD Guideline 75). Positive reactions were observed in Mammalian Erythrocyte Micronucleus Test(OECD Guideline 474, GLP).

Reproductive toxicity : Not available

Specific target organ toxicity (single exposure) : Not available

Specific target organ toxicity (repeat exposure) : Not classified

In the inhalation toxicity test(90 day) with rats, NOAEC = 70 mg/m³.

Aspiration Hazard : Not available

12. Ecological information

A. Ecological toxicity

- Acute toxicity : Not classified
- Chronic toxicity : Not classified

Fish : 96hr-NOEC(Salmo trutta) > 0.072 mg/L (OECD Guideline 203)

crustacean : 48hr-NOEC(Daphnia magna) > 0.071 mg/L

Algae : 72h-NOEC(Pseudokirchneriella subcapitata) >= 0.052 mg/L

B. Persistence and degradability

Persistence : Low persistency (log Kow is less than 4 estimated.) (Log Kow = -0.83) (estimated)

Degradability : Not available

C. Bioaccumulative potential

Bioaccumulation : Bioaccumulation is expected to be low according to the BCF < 500 (BCF = 3.162) (estimated)

Biodegradation : Not readily biodegradable(estimated)

D. Mobility in soil : No potency of mobility to soil. (Koc = 0.1902) (estimated)

E. Other hazardous effect : Not available

F. HAZARDOUS TO THE OZONE LAYER : Not applicable

13. Disposal considerations

A. Disposal method

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

B. Disposal precaution

Consider the required attentions in accordance with waste treatment management regulation.

14. Transport information

A. UN Number Not applicable

B. UN Proper shipping name Not applicable

C. Transport Hazard class Not applicable

D. Packing group Not applicable

E. Marine pollutant Not applicable

F. IMDG/IATA/ICAO Not applicable

G. Special precautions

in case of fire Not applicable

in case of leakage Not applicable

15. Regulatory information

① KOREA Regulatory information

A. Occupational Safety and Health Regulation

Administration subject listed

Occupational exposure limits listed

- Work environment monitoring listed (6 months)
- Health examination agent (12 months)
- B. Chemical Control Act**
 - Existing Chemical Substance (KE-01012)
- C. Dangerous Material Safety Management Regulation**
 - Non-dangerous goods
- D. Wastes Control Act** Not regulated
- E. Other regulation (internal and external)**
 - Internal information
 - Persistent Organic Pollutants Acts Not regulated
- ② Foreign Regulatory Information
 - External information
 - EU classification(classification) : Not classified
 - EU classification(risk phrases) : Not applicable
 - EU classification(safety phrases) : Not applicable
 - EU SVHC list : Not regulated
 - EU Authorisation List : Not regulated
 - EU Restriction list : Not regulated
 - U.S.A management information (OSHA Regulation) : Not regulated
 - U.S.A management information (CERCLA Regulation) : Not regulated
 - U.S.A management information (EPCRA 302 Regulation) : Not regulated
 - U.S.A management information (EPCRA 304 Regulation) : Not regulated
 - U.S.A management information (EPCRA 313 Regulation) : 규제됨
 - U.S.A management information Section 8(b) Inventory (TSCA): Present
 - Japan management information Existing and New Chemical Substances (ENCS): (1)-23
 - China management information Inventory of Existing Chemical Substances (IECSC): Present 37546
 - Canada management information Domestic Substances List (DSL): Present
 - Australia management information Inventory of Chemical Substances (AICS): Present
 - New Zealand management information Inventory of Chemicals (NZIoC): May be used as a single component chemical under an appropriate group standard
 - Philippines management information Inventory of Chemicals and Chemical Substances (PICCS): Present
 - Japan management information ISHL Harmful Substances Whose Names Are to be Indicated on the Label: >=1 % weight
 - Japan management information ISHL Notifiable Substances: >=1 % weight
 - Substance of Roterdame Protocol : Not regulated
 - Substance of Stockholme Protocol : Not regulated
 - Substance of Montreal Protocol : Not regulated

16. Other information

A. Information source and references

- Emergency Response Guidebook 2008;
http://phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/erg2008_eng.pdf
- U.S. National library of Medicine(NLM) ChemIDplus; <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM>
- Korea Occupational Health & Safety Agency; <http://www.kosha.net>
- EPISUITE v4.11; <http://www.epa.gov/opt/exposure/pubs/episuitedi.html>
- Ministry of Public Safety and Security-Korea dangerous material inventory management system; <http://hazmat.mpss.kfi.or.kr/index.do>

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans;

<http://monographs.iarc.fr>

TOMES-LOLI®; <http://www.rightanswerknowledge.com/loginRA.asp>

National Chemicals Information System; <http://ncis.nier.go.kr/ncis/>

Waste Control Act enforcement regulation attached [1]

REACH information on registered substances; <https://echa.europa.eu/information-on-chemicals/registered-substances>

American Conference of Governmental Industrial Hygienists TLVs and BEIs.

NIOSH Pocket Guide; <http://www.cdc.gov/niosh/npg/npgdcas.html>

National Toxicology Program; <http://ntp.niehs.nih.gov/results/dbsearch/>

International Uniform Chemical Information Database(IUCLID)

Korea Maritime Dangerous Goods Inspection Center; <http://www.komdi.or.kr/index.html>

EU CLP; <https://echa.europa.eu/information-on-chemicals/cl-inventory-database>

B. Issuing date 01-04-2014

C. Revision number and date

revision number 5

date of the latest revision 01-04-2024

D. Others

- Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.
- The product must not be used for any purposes other than those specified under heading 1 without first obtaining written handling instructions.
- It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.
- The information given on this safety data sheet must be regarded as a description of the safety requirements relating to our product and not a guarantee of its properties.