Safety Data Sheet

SDS No. : 30402ES
Revision : 1
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1. Product and company identification

Product name: CHIRAL ART Amylose-C

Manufacturer:
YMC CO., LTD.
Quality Assurance Dept.
5-28, Kokufudai , Komatsu-shi, Ishikawa 923- 8557, Japan
TEL: +81-761-47-8224
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Material Uses: Research & Development, Industry use

2. Hazards identification

GHS Classification: N/E

Hazard symbol: N/E

Emergency overview: Low hazard and toxic under usual usage. If contact with skin or eyes, physical stimulation may occur.
Note; This product contains synthetic amorphous silica, not to be confused with crystalline silica. Amorphous silica may cause irritation to skin, eye and respiratory tract. These information are based on non-synthesis silica gel. Synthesis silica gel has not been investigated for health effects.

Remarks:
<Personal precaution>
Avoid exposure - obtain and understand special instructions before use. Keep away from heat, sparks and open flame. Wear appropriate protective equipment such as gloves, safety glasses, lab coat. Avoid prolonged contact with skin and breathing of vapor or spray mist. Do not eat, drink or smoke before handling the product. Wash hands thoroughly after handling the product.
<First-aid>
EYE CONTACT: Immediately flush eyes with plenty of water for at least 10 minutes, lifting the lids occasionally. Check for and remove contact lenses, if possible./SKIN CONTACT: Remove contaminated clothing and shoes. Wash with plenty of water. /EXPOSURE OR POSSIBLE EXPOSURE: Seek medical attention.
<Storage>
Store in a cool dry place. Keep tightly closed. Protect from sunlight, high temperature and moisture.
<Disposal>
Dispose of the product and containers via a licensed waste disposal contractor.

Other toxicity: N/A

3. Composition/Information on ingredients

Chemical Name: Silica gel with chemically bonded phase ligands

Ingredient:

Chemical Name	Chemical Formula	% by weight	CAS No
Silica gel with chemically bonded phase ligands	SiO_2*	100*	7631-86-9*
(Organic constituent: up to ca. 30%)			*As a silica gel

4.First-aid measures

INHALATION: Remove victim to fresh air and lay in position to secure breathing. Seek medical attention immediately.

EYE CONTACT: Immediately flush eyes with plenty of water for at least 10 minutes, lifting the lids occasionally. Check for and remove contact lenses, if possible. Seek medical attention immediately.

SKIN CONTACT: Flush thoroughly with a large amount of water. Immediately remove contaminated clothing. Seek medical attention if needed.

INGESTION: Wash mouth with plenty of water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband. Seek medical attention immediately.

First Aid Instructions: Wear appropriate protective equipment such as gloves, safety glasses, etc. when administering first aid.

Notes to Physician: None

5. Fire-fighting measures

Extinguishing media: This material is non-flammable. If surrounding is firing, follow appropriate fire fighting procedures.

Extinguishing media to be avoided: None

Unusual hazards: None

Special fire-fighting procedures: Keep personnel removed and upwind of any fire and isolate the area. Cool surrounded area with water spray to prevent increasing temperature of equipment and containers. Take appropriate measures to avoid discharging the effluent into the environment.

Protection of fire-fighters: Use appropriate protection wear and glasses while fire fighting.

6. Accidental release measures

Personal precaution / Personal protective equipment and Emergency measures.	Handling equipment should be designed to keep airborne dust to minimum. Shovel up or sweep with a lot of water. It should be cleaned from the windward, and should be evacuated from the leeward. Under dusty conditions wear dust musk to avoid inhalation.
Environmental precautions	Avoid dispersal of spilled material and runoff into the soil, waterways and drains.
Method of containment and cleanup	Stop discharge. Transport containers from the area after confirming their safe handling. Dilute spill with water and wipe, or absorb with incombustible material such as sand or diatom earth, and collect in suitable containers (e.g. stainless steel or plastic). Use appropriate procedures to dispose the spilled material. See section 13.

7. Handling and storage

Handling	<General handling precautions> Always wear proper protective equipment such as protective gloves and goggles/mask when handling. Avoid eye, skin, mucous membrane and clothing contact. Avoid breathing vapor or mist. Do not eat, drink or smoke in areas handling the product including storage, work areas. Keep away from all sources of ignition such as sparks, flame and heat. Wash thoroughly after handling. <Ventilation> Use only in a well-ventilated area equipped with local exhaust ventilation. <Other precautions> Users of this product must be properly trained for safety measures.
Storage	<Storage requirement> Store in a cool dry place. Keep tightly closed. Protect from sunlight, high temperature and moisture. <Container> Keep tightly closed to protect quality with shipping bottle, polyethylene or glass bottles.

8. Exposure control /Personal protection

Engineering controls	Use process enclosures or well-ventilated facilities with adequate general or local exhaust ventilation. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use antistatic device and explosion proof equipment to prevent fire or explosion.		
Concentration limits	Not determined		
Exposure limits	OSHA	PEL-TWA	6mg/m^3 (as a particle. No regulation except for particles.)
	ACGIH	TLV-TWA	10mg/m^3 (as a particle.) 6mg/m^3 (as silica gel.)
Personal protective equipment	<Respiratory protection> Dust musk. Respirator selection must be based on known or anticipated exposure levels. <Protective Gloves> Vinyl gloves <Eye protection> Goggle <Skin protection> Vinyl protective clothing, lab coat or antistatic protective clothing.		

9. Physical and chemical properties

Physical state	powder
Color	White or off-white
Odor(threshold)	Odorless
pH	N/A
Melting Point	N/A
Boiling Point	N/A
Flash Point	N/A
LEL/UEL	(Upper)N/A (Lower)N/A
Vapor Pressure	N/A
Vapor Density	N/A
Specific Gravity (relative density)	Approx. 1.4-1.7mg/mL
Solubility	Negligible (＜0.1%)
Partition Coefficient octanol/water	N/A
Autoignition temperature	N/A
Decomposition Temperature	N/A
Evaporation Rate	N/A
Flammability (Solid, gas)	N/A
Viscosity	N/A
Other data	None

10. Stability and reactivity

Stability	Stable at normal handling and storage conditions.
Hazardous polymerization	Will not occur to produce hazardous substance at normal handling and storage conditions.
Conditions to Avoid	Sunlight, high temperature, humidity, shock, friction.
Incompatibilities	None
Hazardous Decomposition Products	Will not occur at normal handling and storage conditions.

11. Toxicological information

Acute Toxicity Data	Silica dust (“Registry of toxic effect of chemical substances”). Oral mouse LD_{50} 3000mg/kg In case of excess inhalation or handling long time may affect lungs due to accumulation. Recommend to wear appropriate dusk musk while using material.
Irritancy (corrosive) Data	Physical stimulation may occur.
Eye effects	No information available.
Respiratory/Skin effects	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive Effects	No information available.
Single exposure	No information available.
Repeated exposure	No information available.

12. Ecological information

Ecotoxicity	No information available.
Environmental	No information available.
Physical	No information available.
Other information	The ecological effects of this product have not been evaluated. Avoid release to the environment.

13. Disposal considerations

Waste disposal	Dispose in accordance with all applicable regulations. Dispose of its contents and waste via a licensed waste disposal contractor.
Contaminated containers and packaging	Dispose in accordance with all applicable regulations. Dispose after cleaning up the containers and packaging until no residual of contents can be observed. Use a licensed waste disposal contractor.

14. Transport information

International transport regulations	<Maritime Transport> IMO : Not Regulated. <Air Transport> ICAO: Not Regulated. IATA: Not Regulated.
Special safety practice	Load the containers holding the product securely to prevent drop, fall or damage. Transport such containers carefully to prevent significant wear or agitation. See Section 7. Handling and storage for reference when loading/unloading and transporting the product.

15. Regulatory information

U.S.	TSCA / Silicon dioxide listed. R&D Exemption: For laboratory use only. SARA Codes / None.
EU	None.

16. Other information

NFPA Ratings	Health: 1 Flammability: 0 Reactivity: 0
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Reference	OSHA (1994) ACGIH (1999)
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