

Material Safety Data Sheet

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1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION

Trade name:

“Cristone Matrix” and “Cristone Bristle” CONTINUOUS ALUMINASILICATE FIBER”

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredient name and classification</u>	<u>CAS number</u>	<u>Percentage</u>
ALUMINASILICATE FIBERS	1327-36-2	97.0-99.5
ORGANIC SIZING	–	0.5-3.0

3. HAZARDS IDENTIFICATION

Critical hazards Not applicable

4. EMERGENCY MEASURES

- Eyes Wash with water until foreign matter is removed, but do not rub the eyes.
 - Skin Wash with cold water or with lukewarm water.
Thereafter, wash with soap. Consult with medical doctor, if ache or irritation remains.
 - Inhalation If signs or symptom occur, remove person to fresh air. If not breathing, get immediate medical attention.
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5. IN CASE OF FIRE MEASURES

ALUMINASILICATE FIBERS Not applicable. Not combustible.
ORGANIC SIZING Small amount of smoke and carbon monoxide, and trace amount of nitrogen oxides and hydrogen cyanide.
And the other substances are produced upon initial heating.
These decomposition products are not expected to exceed exposure limits during recommended use procedures.

6. ACCIDENTAL RELEASE MEASURES

- Personal Precautions:

Refer to other sections of this Material Safety Data Sheet for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

- Method for Cleaning up:

Sweep carefully and collect the dust. Take due care prevent a spreading or dust.

7. HANDLING AND STORAGE

Precaution for Safe Handling

- To prevent the dispersal of ALUMINASILICATE FIBER dust, countermeasures should be enforced, such as setting up an exhaust facility at points of operation within the plant.
- Respirator should be worn at places where it may be impractical to try to prevent the spread of ceramic fiber dust.
- If necessary, protective eyeglasses and gloves should be worn.
- ALUMINASILICATE FIBER dust, which has become attached to the work clothes, should be removed carefully by using a vacuum cleaner or adhesive tape without leading to a dispersal of dust.
- Gargle and wash the hands after work.

Precautions for Safe Storage

Keep container dry

Fire Prevention

Not applicable

8. EXPOSURE PREVENTION MEASURES

- Regulatory Concentration

Mass Concentration(inhaled dust) : 2.9mg/m³(zero content of free-silica is applied)

Fiber concentration is not fixed.

Referential Standard* : Fiber Concentration Standard: length > 5micron,
Dia.< 3micron,
Aspect ratio > 3

Exposure Concentration : 1 fiber/cm³(TWA)

*U.S. Occupational Safety & Health Administration Standard(OSHA) (1992)

- Protection

Respirator:

It is necessary to wear the respirator when it is anticipated that dust concentration in the work environment will exceed the standard. The respirator with filter exchangeable is to be used. There are various approved respirators available on the market, but the type that is most fit for the work environment, with a tight fit to the face and a good filter should be chosen.

Eyeglasses:

Goggles and eyeglasses with a side shield should be used.

Gloves/Work Clothes:

Gloves should be worn. Work clothes should be long sleeve. The clothes should be suited to work activity. There should be no skin exposure.

9. PHYSICAL/CHEMICAL PROPERTIES

Appearance	White and Fiber
Boiling point	not applicable
Melting Point	<1800 degree (fiber)
Auto flammability	not applicable
Average Fiber Diameter	10-32 microns
True Specific Gravity	2.5-3.5 (Water=1)
Water Solubility	Non soluble in water and organic solvents

10. STABILITY AND REACTIVITY

Has stability, no reactivity

11. HARMFULNESS INFORMATION

(1). Acute effect

Eye contact : Physical irritation.

Skin contact : Itchiness, red spots of temporary nature, but not chronic.

(2). Chronic effect

Dust created during production contains inhalable fiber which, if inhaled over a long period of time, harbors a risk of bringing about respiratory disorders. Currently, however, we know of no reports that such disorders have occurred for the above reason during the handling of ceramic fiber.

(3). Carcinogenic

CRYSTAL ALUMINASILICATE FIBERS are considered to be non-respirable and, therefore, unlikely to pose a cancer risk.

Respirable fibers are defined by the World Health Organization as having lengths greater than 5 microns, diameter is less than 3 microns and aspect ratios are greater than 3:1.

CRYSTAL FIBER has diameters 10-40 microns and has continuous in length.

12. ECOLOGICAL INFORMATION

Not soluble in water so there is no effect on water organisms.

13. WASTE DISPOSAL

To prevent ALUMINASILICATE FIBER dust becoming airborne in the periphery, place the dust in a bag of plastic having a minimum thickness of 0.05mm.

Comply with local regulations.

14. TRANSPORT INFORMATION

ALUMINASILICATE FIBER poses no problem during transport, but due care must be taken to prevent any possible dispersal of material due to damage on packages.

15. APPLICATION OF LAWS/REGULATIONS

ALUMINASILICATE FIBER is classified as a "mineral" under the "Regulation for Prevention of Dust Impediments" (Dust Regulation).

It is not governed by "Special Chemical Materials Impediment Prevention Regulation (Spechem Reg.); but in case of such operations as the following, the aforementioned "will be applicable:

- ① Operations in places where materials are cut, whittled and finished.
(see Dust Reg. Chart 1-6)
- ② Operations in places where materials are machine-pulverized and sieved.
(see Dust Reg. Chart 1-8)
- ③ Operations where furnaces are constructed or repaired with the use of refractories, and where ovens or furnaces that use refractories are dismantled or destroyed.
(see Dust Reg. Chart 1-19)

It is recommended that the "Guideline for Work and Safety for Glass Fibers and Rock Wool (Ministry of Labor Notification 1 of Jan. 1 .1993) be applied where the necessary arises.

16. OTHER INFORMATIONS

We believe the information on this data sheet is correct to the best of our current knowledge. However, no warranty is made with respect to its completeness.

The data in Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material.

17. BIBLIOGRAPHY

- 1) IARC : Monographs on Evolution of the Carcinogenic Risk of Ceramics to Humans vol. 43(1988) "Man-made Fiber , Mineral Fibers and Radon"
 - 2) Central Labor Accidents Prevention Assn. : Criteria 77 "Man-made Mineral Fibers"
 - 3) Grass Fiber Assn. , Ceramic Fiber Assn. , Japan Asbestos society , Rock Wool Assn. : "Safety Measures for Use of Mineral and Syntheric Fibers"
 - 4) Grass Fiber Assn. , Ceramic Fiber Assn. , Rock Wool Assn. : "MMMMF Fiber Count Measurement Manual".(Aug . 1994)
 - 5) Kikuji Kimura : "Respirators" Rev . Ed.,Labor Sci. Research(Publisher)
 - 6) Labor Ministry : "Glass Fibers and Rock Wool Hygiene Guideline" Jan.1 1993
 - 7) Carborundum Inc. : Info. Sheet(1992) & Others
 - 8) Thermal Ceramics Inc. : Material Safety Data Sheet #201(Nov.9 1992)
 - 9) Central Labor Accident Prevention Assn. : "1992 Report on Asbestos Substitutes"
 - 10) Glass Fiber Assn., Rock Wool Assn. : "Glass Fiber , Rock Wool Safety Analysis"
 - 11) Ceramic Fiber Assn. : "Work & Hygiene Manual for Ceramic Fiber Applications"(1995)
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This Material Safety Data Sheet is followed by Data Sheets, prepared by Environmental Committee of RCF Assn. On 5.Jul. 1995.