

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product name

DIAMOND CLUSTER

Version 1.3

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air.

Skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

Eye contact

After eye contact: rinse out with plenty of water.

Ingestion

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

We have no description of any toxic symptoms.

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapors.

Advice for firefighters

Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

No special precautionary measures necessary.

Methods and materials for containment and cleaning up

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Observe possible material restrictions (see sections 7 and 10).
 Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Conditions for safe storage, including any incompatibilities

Tightly closed. Dry.

Storage temperature: no restrictions.

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>General threshold limit value for dust</i>			
Z1A	Time Weighted Average (TWA):	5 mg/m ³	Form of exposure: Respirable fraction.
	Time Weighted Average (TWA):	15 mg/m ³	Form of exposure: Total dust.
	Time Weighted Average (TWA):	50millions of particles per cubic foot of air	Form of exposure: Total dust.
	Time Weighted Average (TWA):	15millions of particles per cubic foot of air	Form of exposure: Respirable fraction.
	Time Weighted Average (TWA):	15 mg/m ³	Form of exposure: Total dust.
	Time Weighted Average (TWA):	5 mg/m ³	Form of exposure: Respirable fraction.
OSHA_TRANS	PEL:	5 mg/m ³	Form of exposure: Respirable fraction.
	PEL:	15 mg/m ³	Form of exposure: Total dust.
ACGIH	Time Weighted Average (TWA):	10 mg/m ³	Form of exposure: Inhalable particles.
	Time Weighted Average (TWA):	3 mg/m ³	Form of exposure: Respirable particles.
<i>mica (muscovite) 12001-26-2</i>			
ACGIH	Time Weighted Average (TWA):	3 mg/m ³	Form of exposure: Respirable fraction.
NIOSH/GUIDE	Recommended exposure limit (REL):	3 mg/m ³	Form of exposure: Respirable.
Z1A	Time Weighted Average (TWA):	3 mg/m ³	Form of exposure: Respirable dust.
	Time Weighted Average (TWA):	20millions of particles per cubic foot of air	

titanium(IV) oxide 13463-67-7

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ACGIH	Time Weighted Average (TWA):	10 mg/m ³	
OSHA_TRANS	PEL:	15 mg/m ³	Form of exposure: Total dust.
Z1A	Time Weighted Average (TWA):	10 mg/m ³	Form of exposure: Total dust.
<i>crystalline silica 1317-95-9</i>			
ACGIH	Time Weighted Average (TWA):	0.025 mg/m ³	Form of exposure: Respirable fraction.
Z1A	Time Weighted Average (TWA):	0.1 mg/m ³	Form of exposure: Respirable dust. Expressed as: as quartz

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Change contaminated clothing. Wash hands after working with substance.

Eye/face protection

Safety glasses

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Respiratory protection

required when dusts are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state	powder
Color	white
Odor	odorless
Odor Threshold	Not applicable
pH	4 - 7 at 100 g/l 68 °F (20 °C) (slurry)
Melting point	No information available.

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Boiling point	No information available.
Flash point	Not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	The product is not flammable.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	No information available.
Relative vapor density	No information available.
Density	2.7 - 2.9 g/cm ³ at 68 °F (20 °C)
Relative density	No information available.
Water solubility	at 68 °F (20 °C) insoluble
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Bulk density	340 - 360 kg/m ³
Particle size	Particle size 20 - 150 µm

SECTION 10. Stability and reactivity

Reactivity

See below

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

no information available

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Conditions to avoid

no information available

Incompatible materials

no information available

Hazardous decomposition products

no information available

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Inhalation, Eye contact, Skin contact, Ingestion

Target Organs

Respiratory system

Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	Group 2B: Possibly carcinogenic to humans titanium(IV) oxide 13463-67-7 Group 1: Carcinogenic to humans crystalline silica 1317-95-9
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	A2: Suspected human carcinogen crystalline silica 1317-95-9

Further information

The results of animal experiments using pigments of this type indicate no toxicologically relevant properties. Since the substance is poorly absorbed, no hazardous properties are to be anticipated. Inhalation of the dusts should be avoided as even inert dusts may impair respiratory organ functions. The individual test results were as follows: skin tolerance (rabbit): no irritant effect; eye irritation test (rabbit): no irritant effect; sensitization test (guinea pig): no sensitizing potential; subchronic toxicity (rat): no findings up to 20,000 ppm. LD₅₀ (oral, rat): not determinable; all animals still alive after 15,000 mg/kg.

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Chronic toxicity (rat): 5 % of the product added to the feed for a period of 2.5 years did not show any toxicological changes or carcinogenic effects in animals.

LC₅₀ (inhalational, rat): male animals: between 4.6 and 14.9 mg/l air; female animals: > 14.9 mg/l air.

The product did not show any genotoxic effects in the micronucleus test carried out in rats in concentrations of up to 2000 mg/kg (limit test).

Handle in accordance with good industrial hygiene and safety practice.

Ingredients

mica (muscovite)

No information available.

titanium(IV) oxide

Acute oral toxicity

LD50 Rat: > 10,000 mg/kg (External MSDS)

Skin irritation

Rabbit

Result: No skin irritation

(IUCLID)

Eye irritation

Rabbit

Result: No eye irritation

(IUCLID)

SECTION 12. Ecological information

Ecotoxicity

No information available.

Persistence and degradability

No information available.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Additional ecological information

No ecological problems are to be expected when the product is handled and used with due care and attention.

Ingredients

mica (muscovite)

No information available.

titanium(IV) oxide

Toxicity to fish

LC0 Leuciscus idus (Golden orfe): > 1,000 mg/l(External MSDS)

Toxicity to bacteria

EC0 Pseudomonas fluorescens: > 5,000 mg/l(External MSDS)

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SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

Not classified as dangerous in the meaning of transport regulations.

Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. Regulatory information

United States of America

SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Ingredients

mica (muscovite)
titanium(IV) oxide

Pennsylvania Right To Know

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Ingredients

mica (muscovite)
titanium(IV) oxide

New Jersey Right To Know

Ingredients

mica (muscovite)
titanium(IV) oxide
crystalline silica

California Prop 65 Components

WARNING: this product contains a chemical known in the State of California to cause cancer.

Ingredients

titanium(IV) oxide
crystalline silica

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.
DSL: All components of this product are on the Canadian DSL.
KOREA: Not in compliance with the inventory

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Labeling

Precautionary Statements

Prevention
P260 Do not breathe dust.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 03/14/2015

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.