

TISSUE TRANSFERS

Chemical Substance Safety Data Sheet

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1. Chemicals and company information

Name of chemical:	Composite oxide pigment
Name of chemical substance:	Cobalt, aluminium and magnesium composite oxide
Product Name:	Momoyama Blue

2. Hazard Summary

GHS Classification

Physicochemical hazard:	Combustible solids	Not classified
	Pyrophoric solid	Not classified
	Self-heating chemicals	Not classified
	Substance which generates inflammable gas through interaction with water	Not classified
Physical hazard:	Acute toxicity (oral)	Not classified
	Germ [reproductive] cell mutagenicity	Not classified

Environmental hazard:

Hazard and toxicity not listed above is either excluded from classification or cannot be classified.

GHS Label-related:

Warning statements: None

Hazard information: None

Cautionary and preventative strategies:

- Obtain the MSDS before using, and do not handle before reading and understanding all of the safety precautions.
- Individual protective equipment and ventilation equipment to be worn as required, and exposure to be avoided.
- In the event of insufficient ventilation, respiratory protective equipment should be worn.
- Avoid inhaling dust
- Do not eat, drink or smoke when using this product.
- Do not remove any contaminated clothing from the workplace.
- Wear protective gloves.
- Wash hands thoroughly after handling [the product].
- Avoid releasing into the environment.

Counter-measures:

- If inhaled, take the victim into a location where there is fresh air, and make sure s/he rests in a position in which it is easy to breathe.
- If there are any respiratory symptoms, see a doctor and receive medical attention.
- If the product comes into contact with the skin, wash with plenty of water and soap.
- Do not remove any contaminated work clothes from the work place, and launder before reusing.
- If skin becomes irritated or rash appears, see a doctor and receive medical attention.
- If swallowed, do not try to vomit, instead see a doctor immediately and receive medical attention.
- If the product enters the eyes, carefully wash the eyes for several minutes with water. If wearing contact lenses, remove and wash if the lenses can be easily removed.
- If irritation of the eyes continues, see a doctor and receive medical attention.
- In the event of exposure, or if there is concern that [the person] has been exposed, see a doctor, get a diagnosis and receive medical attention.
- If the person doesn't feel well, contact a doctor.
- Collect any spillage.

Storage:

- Store [the product] at normal temperature, in a covered indoor warehouse, and avoid excessive humidity.

Disposal:

- Treat [the product] as industrial waste, and adhere to "the laws related to the disposal and cleaning of waste products".

3. Information on the composition and components

Classification:	Composite oxide pigment
Whether single or a blend:	Single product
Name of chemical:	Cobalt blue, Spinel
Chemical formula:	(CoMg) A1204
CIGN:	Pigment Blue 28
CI No:	77346
CAS No.	1345-16-0
EINEOS No.	310-193-6
Content:	99% or higher
Official Gazette Notice Number:	1-267 1-23 1-465

Law for the Promotion of Chemical Management (PRTR Law)

Class I Specified Chemical Substance

Class I Specified Chemical Substance No. 132 Cobalt and its composites (23% Co)

Industrial Safety and Health Law

Substances that must be displayed (name etc) as determined by Article 57 Clause 1

Substances that must be notified as determined by Article 57-2 Clause 1

No.172 Cobalt and its composites (23% Co)

4. Emergency procedures

<In the event that [the product] is inhaled>

- Take the victim to a location where there is fresh air, and ensure that s/he rests in a position in which it is easy to breathe.
- If there are any respiratory symptoms, see a doctor and receive medical attention.

<In the event that that the product comes into contact with skin>

- Immediately wash the skin
- Use plenty of water and soap when washing. If skin becomes irritated or rash appears, see a doctor and receive medical attention.

<In the event that the product enters the eyes>

- Carefully wash the eyes for several minutes with water. If wearing contact lenses, remove and wash if the lenses can be easily removed.
- If irritation of the eyes continues, see a doctor and receive medical attention.

<In the event that the product is swallowed>

- Do not try to vomit, instead see a doctor and receive treatment.

5. In the event of a fire

The product is non-flammable.

<Appropriate fire extinguisher> Water, carbon dioxide, foam, powder

<Fire extinguishing agents that must not be used> None

6. In the event of a spillage

<Precautionary measures for humans, protective equipment and emergency measures>

Workers should wear appropriate protective equipment (refer to 8. Preventing Exposure and the section on protective measures), and avoid coming into contact with the eyes and skin, and inhaling the product.

<Precautionary measures for the environment>

Do not release into the environment.

Do not discharge into waterways, and take precautions to avoid a negative impact on the environment.

<Containment and cleaning methods and equipment, and cleaning methods and equipment such as collection and neutralization>

If the product spills on the floor, immediately collect and transfer into an empty container using a vacuum extractor, and then wipe the product away using a waste cloth. After collection, dispose as industrial waste. As it is a coloured powder, ensure that the powder doesn't scatter or contaminate the surroundings.

7. Precautions related to handling and storage

<Precautions related to handling>

- **Measures to prevent exposure of person/s handling the product**

8. Follow the measures outlined in Exposure Prevention and Protective Measures and wear protective equipment

- **Measures to prevent the generation of aerosol and dust**

8. Follow the measures outlined in Exposure Prevention and Protective Measures

<Storage Precautions>

- **Chemical substances that must not be mixed with or be in contact [with the product]**

None

- **Storage conditions (appropriate storage conditions and storage conditions to be avoided)**

Avoid excessive humidity, and store at normal temperature, in a covered indoor warehouse. Seal the container and store in a locked and well ventilated location.

8. Exposure Prevention and Protective Measures

Managed Concentration: Ministry of Health, Labour and Welfare - Cobalt and its inorganic compounds 0.02mg/m³ cobalt

Allowable concentration: Japan Society for Occupational Health

Inhalant dust	2mg/m ³ (Class 3 Dust – Other inorganic and organic dust)
Total dust	8mg/m ³ (Class 3 Dust – Other inorganic and organic dust)
	0.05mg/m ³ Co (cobalt and cobalt compounds)
ACGIH TLV	Nuisance Dust 10mg/m ³
	0.02mg/m ³ cobalt (cobalt inorganic compounds)
OSHA PEL	Nuisance Dust 10mg/m ³

Equipment for minimizing exposure

- Equipment to hermetically seal the source of dust, local exhaust ventilation or push-pull type ventilation system must be installed.
- If the above is extremely difficult to carry out, or when temporary works are to be carried out, measures to prevent impairment to the health of workers such as installing a general ventilation equipment must be carried out.
- The structure and performance of the local exhaust ventilation or push-pull type ventilation system must be compliant.
(The inhibitory concentration related to local exhaust ventilation is cobalt compound 0.02mg/m³ (as Co).

- Regular independent inspection and testing must be carried out.
- Submission of the installation plan
- Dust removal equipment appropriate to the size of the particles of the dust must be installed on any flues in the production equipment, local exhaust ventilation device or push-pull type ventilation systems from which gas containing dust is emitted.

Protective Measures

Respiratory protective equipment

The appropriate respiratory protective equipment, such as dust masks, must be worn.

Protective glasses

Appropriate items to protect the eyes must be worn, such as normal glasses with side shields or goggles.

Protective gloves

The appropriate protective gloves such as rubber or plastic gloves must be worn.

Protective clothing

Work clothes, safety shoes, protective boots. Personal protective clothing must be worn as required.

9. Physical and chemical characteristics

<External appearance of the chemical product (physical state, shape, color etc)>

Blue, colored powder

<Odor>

Odorless

<Specific gravity (relative concentration)>

3.5-4.5 g/cm³

<Solubility>

Water	Insoluble	
Acid	Insoluble	
Alkali	Insoluble	
Organic solvent	Methanol, butanol, MEK, Xylol	Insoluble

10. Stability and reactivity

Inflammability	None
Flash point	None
Explosive limit	(No upper or lower limit)
Autoreactivity	None
Acidification	None
Stability	Stable when handled under normal conditions

11. Hazard information

Acute toxicity (oral)	Rat LD50 > 5000mg/kg
Skin corrosivity/irritation	Negative
Germ cell mutagenicity	Negative
Carcinogenicity	IARC – not listed NTP – not listed Japan Society for Occupational Health - not listed
Genotoxicity	No data

12. Environmental impact information

Ecotoxicity	No data
Acute toxicity	No data
Acute bacterial toxicity	No data

13. Precautions when disposing

Treat [the product] as industrial waste, and adhere to “the laws related to the disposal and cleaning of waste products”.

The disposal of the contents and containers to be consigned to a specialist waste disposal company approved by the Prefectural Governor.

14. Precautions when transporting

United Nations classification and number

Does not correspond to a hazardous material as defined by the United Nations.

Avoid rough handling of the product and avoid handling in a way that may destroy the container or result in water leakage.

15. Applicable Laws and Regulations

Law for the Promotion of Chemical Management (PRTR Law)

Class I Specified Chemical Substances

Class I Specified Chemical Substances No. 132 Cobalt and its composites

Industrial Safety and Health Law

Class II Specified Chemical Substances

Formulations containing 13-2 cobalt and its inorganic compound representing 1% or over of the weight

Substances that must be displayed as determined by Article 57 Clause 1

Substances that must be notified as determined by Article 57-2 Clause 1

No.172 Cobalt and its composites

Law governing the disposal and cleaning of waste products

16. Other information

Literature:

- 1) Recommendations on the acceptable concentrations (2006 version),
Japan Society for Occupational Health
- 2) ACGIH Acceptable concentration levels of chemical substances (1999 version)
- 3) OSHA Hazard Communication Standard
- 4) IARC Monograph

Reference material:

GHS Classification Results
National Institute of Technology and Evaluation (NITE)

Request:

- This Chemical Substance Safety Data Sheet is required for the appropriate use of this product, and must be observed. It represents an outline, and is to be used for normal handling.
- Refer to this Chemical Substance Safety Data Sheet for information on how to use this product, with any decisions made to be the responsibility of the user.
- The content in this sheet may be revised to reflect amendments to the law or new information.
- The content, constituent ratio, physical and chemical values are not the quality assurance values.
- The Chemical Substance Safety Data Sheet provides information, and does not provide any guarantee.

I certify that I have completed this translation to the best of my knowledge and ability from the Japanese.

Lotte Lawrence, Translator NAATI No. 24501