



The Shepherd Color Company
We Brighten Lives

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name BLUE 211
Version # 08
Issue date 12-12-2011
Revision date 10-21-2013
Supersedes date 07-19-2013
Chemical name COBALT CHROMITE BLUE-GREEN SPINEL
Product Code BL0211
Synonym(s) KINGFISHER BLUE #211 * CI Pigment Blue 36 * CI Constitution #77343 * CPMA # 13-29-2
Manufacturer
Manufacturer Information Distributeur : DOUSSELIN
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2. Hazards Identification

Emergency overview Health injuries are not known or expected under normal use.
Potential health effects
Routes of exposure Inhalation. Ingestion.
Eyes This product may cause slight irritation to the eyes.
Skin This product may cause irritation to the skin.
Inhalation Inhalation of dusts may cause respiratory irritation.
Ingestion Health injuries are not known or expected under normal use.
Signs and symptoms Product dust may be irritating to eyes, skin and respiratory system.
Potential environmental effects Ecological injuries are not known or expected under normal use.

3. Composition / Information on Ingredients

Components	CAS #	Percent
COBALT CHROMITE BLUE - GREEN SPINEL	68187-11-1*	100

Composition comments This product is the result of high temperature calcination of the component substances. Due to its unique crystalline structure the properties of this finished pigment do not necessarily reflect the properties of the component metals or oxides.

4. First Aid Measures

First aid procedures

Eye contact	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.
Skin contact	Wash the skin immediately with soap and water. Get medical attention if irritation develops or persists.
Inhalation	Remove to fresh air. If the affected person is not breathing, apply artificial respiration. If breathing is difficult, give oxygen. Call a physician if symptoms develop or persist.
Ingestion	Never give anything by mouth to an unconscious person. If swallowed, do NOT induce vomiting. Give several glasses of water to dilute contents of stomach and call a physician.
General advice	If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance. Where there is a potential for eye exposure to this substance, an eye wash fountain should be provided within the immediate work area for emergency use.

5. Fire Fighting Measures

Flammable properties	The product is not flammable.
Extinguishing media	
Suitable extinguishing media	Use extinguishing agent suitable for type of surrounding fire.
Unsuitable extinguishing media	Not applicable.
Protection of firefighters	
Specific hazards arising from the chemical	None known.
Protective equipment and precautions for firefighters	Use protective equipment appropriate for surrounding materials.
Fire fighting equipment/instructions	Not a fire hazard.
Specific methods	Not established.
General fire hazards	This product is not flammable.

6. Accidental Release Measures

Personal precautions	Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust from the spilled material.
Environmental precautions	Do not discharge into drains, water courses or onto the ground.
Methods for containment	Collect material into appropriate containers for reuse or disposal. Material may also be flushed with water to a wastewater treatment system.
Methods for cleaning up	Avoid dust formation. Clean up promptly by scoop or vacuum. Flush the area with water.
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. Keep formation of airborne dusts to a minimum. When using, do not eat, drink or smoke. Wash hands thoroughly after handling.
Storage	Room temperature - normal conditions. Use care in handling/storage. Store in closed original container in a dry place. Keep in properly labelled containers.

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH

Components	Type	Value	% Metal	Form
CHROMIUM (III) AND COMPOUNDS	TLV	0.5 mg/m ³	22 - 32%	(as Cr)
COBALT METAL, DUST AND FUMES	TLV	0.02 mg/m ³	22 - 32%	(as Co)

U.S. - OSHA

Components	Type	Value	% Metal	Form
CHROMIUM (III) AND COMPOUNDS	PEL	0.5 mg/m ³	22 - 32%	(as Cr)
COBALT METAL, DUST AND FUMES	PEL	0.1 mg/m ³	22 - 32%	(as Co)

Components	Type	Value	% Metal	Form
	Vacated PELS TWAs	0.05 mg/m3	22 - 32%	(as Co)

Engineering controls	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
Personal protective equipment	
Eye / face protection	Safety glasses with side-shields.
Skin protection	Normal work clothing (long sleeved shirts and long pants) is recommended.
Respiratory protection	Use a particulate filter respirator for particulate concentrations exceeding the Occupational Exposure Limit. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever work place conditions warrant a respirator's use. If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection. MSHA/NIOSH respirators approved for dusts TC-21C or NIOSH approved cartridges for Non-oil aerosols, N95, N99, N100 (42 CFR 84). If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
General hygiene considerations	Use personal protective equipment as required. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	Powder.
Physical state	Solid.
Form	Powder.
Color	blue green
Odor	None.
Odor threshold	Not available.
pH	8.3 Shepherd Color Test Method 101
Vapor pressure	Not applicable Not applicable.
Vapor density	Not applicable. Not applicable
Boiling point	Not applicable Not applicable.
Melting point/Freezing point	Not applicable.
Solubility (water)	Negligible Negligible
Specific gravity	4.7 Shepherd Color Test Method 312
Relative density	Not available.
Flash point	Not applicable.
Flammability limits in air, upper, % by volume	Not applicable.
Flammability limits in air, lower, % by volume	Not applicable.
Auto-ignition temperature	Not applicable.
Evaporation rate	Not applicable. Not applicable
Viscosity	Not applicable
Other data	
Decomposition temperature	Not applicable. Not applicable
Flammability (solid, gas)	Not applicable.
Loose Packing Density	4.4 lb/gal Shepherd Color Test Method 194

10. Chemical Stability & Reactivity Information

Chemical stability	Stable under normal temperature conditions and recommended use.
Conditions to avoid	None known.
Incompatible materials	None known.
Hazardous decomposition products	No hazardous decomposition products are known.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Product	Species	Test Results
BLUE 211		
Acute Inhalation LD50	Rat	Not Tested
Oral LD50	Rat	> 10000 mg/kgShepherd Color Company Data

Components	Species	Test Results
COBALT CHROMITE BLUE - GREEN SPINEL (CAS 68187-11-1*)		
Acute Inhalation LD50	Rat	Not Tested
Oral LD50	Rat	> 10000 mg/kgShepherd Color Company Data

Sensitization	No data available.
Acute effects	May be slightly irritating to skin and eyes. May cause respiratory irritation.
Component analysis - LD50	Refer to LD 50 information above.
Local effects	Product dust may be irritating to eyes, skin and respiratory system.
Chronic effects	No data available.
Subchronic effects	No data available.
Skin corrosion/irritation	Contact with skin may cause irritation.
Epidemiology	No epidemiological data is available for this product.
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Reproductive effects	No data available.
Teratogenicity	No data available.
Symptoms and target organs	Product dust may be irritating to eyes, skin and respiratory system.
Human experience	Product dust may be irritating to eyes, skin and respiratory system.
Further information	This product is the result of high temperature calcination of the component substances. Due to its unique crystalline structure the properties of this finished material do not necessarily reflect the properties of the component metals or oxides. Repeated overexposure to this compound may cause eye, skin and respiratory tract irritation. Some compounds of the metals used in the manufacturing of this material have demonstrated various toxic properties. However, there is no evidence that this material has these toxic characteristics.

12. Ecological Information

Ecotoxicity	Not expected to be harmful to aquatic organisms.
Environmental effects	Not classified as an environmental hazard.
Aquatic toxicity	This material is not expected to be harmful to aquatic life.

Persistence and degradability	The product is not expected to be biodegradable.
Bioaccumulation / Accumulation	The product does not contain any substances expected to be bioaccumulating.
Mobility in environmental media	The product is insoluble in water.

13. Disposal Considerations

Disposal instructions	All wastes must be handled in accordance with local, state and federal regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations	<p>All components are on the U.S. EPA TSCA Inventory List. This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. IARC has classified cobalt and cobalt compounds as possibly carcinogenic to humans. (Group 2B, Monograph #52).</p> <p>THIS PRODUCT CONTAINS A CHEMICAL OR CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OR TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372. THIS INFORMATION MUST BE INCLUDED IN ALL MSDS THAT ARE COPIED AND DISTRIBUTED FOR THIS MATERIAL. 100% COBALT COMPOUND 100% CHROMIUM COMPOUND.</p>	
Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number	Not listed.	
Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))	Not regulated.	
DEA Exempt Chemical Mixtures Code Number	Not regulated.	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.	
CERCLA (Superfund) reportable quantity	None	
Superfund Amendments and Reauthorization Act of 1986 (SARA)		
Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No	
Section 302 extremely hazardous substance	No	
SARA 311/312 Hazardous chemical	Yes	
Inventory status		
Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

US state regulations

- US. Massachusetts RTK - Substance List
Not regulated.
- US. Pennsylvania RTK - Hazardous Substances
Not regulated.
- US. Rhode Island RTK
Not regulated.

16. Other Information

Further information	HMIS® is a registered trade and service mark of the NPCA.
HMIS® ratings	Health: 1* Flammability: 0 Physical hazard: 0
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification.
This data sheet contains changes from the previous version in section(s):	Regulatory Information: United States HazReg Data: North America