

SAFETY DATA SHEET



1. Identification

Product identifier	Cobalt Blue - 506
Other means of identification	
Product Code	Cobalt Blue - 506
Synonyms	CI Pigment Blue 28 * CI Constitution #77346 * CPMA # 13-26-2
Recommended use	Colorant
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
	Michael Harding Art Formulas LTD Unit K Springvale Ind Est Cwmbran, Torfaen, NP44 5BE Phone: +44(0)1633484700 EMERGENCY INFORMATION: CHEMTREC - Domestic 1-800-424-9300 CHEMTREC - International +1 703 527 3887

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
OSHA defined hazards	Not classified.

Label elements

Hazard symbol	None.
Signal word	None.
Hazard statement	None.
Precautionary statement	
Prevention	Not assigned.
Response	Not assigned.
Storage	Not assigned.
Disposal	Not assigned.
Hazard(s) not otherwise classified (HNOC)	Not assigned.

Supplemental information May cause skin and eye irritation. Inhalation of dusts may cause respiratory irritation. Avoid contact with eyes and prolonged or repeated contact with skin. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. IF SWALLOWED: Do not induce vomiting. If conscious, drink plenty of water. Never give anything by mouth to an unconscious person. IF IN EYES: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. IF ON SKIN: Wash with plenty of soap and water. Call a physician if symptoms develop or persist.

For industrial use only. Additional information is given in the Safety Data Sheet.

Substance(s) formed under the condition of use Not applicable.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
COBALT ALUMINATE BLUE SPINEL	CI Pigment Blue 28 CI Constitution #77346 CPMA # 13-26-2	1345-16-0	100

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

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

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.

Skin contact Wash the skin immediately with soap and water. Get medical attention if irritation develops or persists.

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.

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.

Most important symptoms/effects, acute and delayed Contact with eyes may cause irritation. Inhalation of dusts may cause respiratory irritation. Contact with skin may cause irritation.

General information 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

Suitable extinguishing media Use extinguishing agent suitable for type of surrounding fire.

Unsuitable extinguishing media Not applicable.

Specific hazards arising from the chemical None known.

Special 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, protective equipment and emergency procedures Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust from the spilled material. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Methods and materials for containment and cleaning up Avoid dust formation. Following product recovery, flush area with water. Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into closed container.

Environmental precautions Do not discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe 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.

Conditions for safe storage, including any incompatibilities Store in closed original container in a dry place. Room temperature - normal conditions. Use care in handling/storage. Keep in properly labelled containers.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Metals	Type	Value	Percent	Form
COBALT METAL, DUST AND FUMES	PEL	0.1 mg/m ³	29 - 34%	(as Co) Dust and fume.

US. ACGIH Threshold Limit Values

Metals	Type	Value	Percent	Form
COBALT METAL, DUST AND FUMES	TWA	0.02 mg/m ³	29 - 34%	Inhalable. (as Co)

Biological limit values

ACGIH Biological Exposure Indices

Metals	Value	Form	Determinant	Specimen	Sampling Time
COBALT METAL, DUST AND FUMES	1 µg/l	(as Co)	Cobalt	Blood	*

* - For sampling details, please see the source document.

Appropriate engineering controls Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection Safety glasses with side-shields.

Skin protection

Hand protection

Rubber or plastic gloves. PVC disposable gloves. Use impervious gloves.

Other

Normal work clothing (long sleeved shirts and long pants) is recommended.

Respiratory protection

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. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. MSHA/NIOSH respirators approved for dusts TC-21C or NIOSH approved cartridges for Non-oil aerosols, N95, N99, N100 (42 CFR 84). 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.

Thermal hazards

Not applicable.

General hygiene considerations

Use personal protective equipment as required. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance

Powder.

Physical state

Solid.

Form

Powder.

Color

blue

Odor

None.

Odor threshold

Not available.

pH

9.7 (Shepherd Color Test Method 101)

Melting point/freezing point

Not applicable

Initial boiling point and boiling range

Not applicable

Flash point

Not applicable.

Evaporation rate

Not applicable

Flammability (solid, gas)

Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

Not applicable.

Flammability limit - upper (%)

Not applicable.

Explosive limit - lower (%)

Not available.

Explosive limit - upper (%)

Not available.

Vapor pressure

Not applicable

Vapor density

Not applicable.

Relative density

Not available.

Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not applicable
Viscosity	Not applicable
Other information	
Specific gravity	See tech data sheet.
Loose Packing Density	See tech data sheet.

10. Stability and reactivity

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

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system.
Skin contact	Contact with skin may cause irritation.
Eye contact	May irritate eyes.
Ingestion	No adverse effects due to ingestion are expected.

Symptoms related to the physical, chemical and toxicological characteristics Product dust may be irritating to eyes, skin and respiratory system.

Information on toxicological effects

Acute toxicity May cause respiratory irritation. May be slightly irritating to skin and eyes.

Product	Species	Test Results
COBALT ALUMINATE BLUE SPINEL (CAS 1345-16-0)		
Acute		
Inhalation		
LD50	Rat	Not Tested
Oral		
LD50	Rat	> 10000 mg/kg Shepherd Color Company Data

Skin corrosion/irritation Contact with skin may cause irritation.

Serious eye damage/eye irritation May irritate eyes.

Respiratory or skin sensitization

Respiratory sensitization No data available.

Skin sensitization No data available.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

IARC Monographs. Overall Evaluation of Carcinogenicity

COBALT COMPOUND (CAS N/A) 2B Possibly carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

COBALT COMPOUND (CAS N/A)

Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity	No data available.
Specific target organ toxicity - single exposure	No data available.
Specific target organ toxicity - repeated exposure	No data available.
Aspiration hazard	Not applicable.
Chronic effects	No data available.
Further information	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. 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.

12. Ecological information

Ecotoxicity	Not expected to be harmful to aquatic organisms.
Persistence and degradability	The product is not expected to be biodegradable.
Bioaccumulative potential	The product does not contain any substances expected to be bioaccumulating.
Mobility in soil	No data available.
Mobility in general	No data available.
Other adverse effects	None known.

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.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not available.

15. Regulatory information

US federal regulations	This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.
Toxic Substances Control Act (TSCA)	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.
CERCLA Hazardous Substance List (40 CFR 302.4)	Not listed.
SARA 304 Emergency release notification	Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)	Not regulated.
Superfund Amendments and Reauthorization Act of 1986 (SARA)	
SARA 302 Extremely hazardous substance	Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
COBALT COMPOUND	N/A	100

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

COBALT COMPOUND (CAS N/A)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Contains component(s) regulated under the Safe Drinking Water Act.

US state regulations

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

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
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
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	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).

16. Other information, including date of preparation or last revision

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Version # 10

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. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information Composition/information on ingredients: Component information
 Accidental release measures: Personal precautions, protective equipment and emergency procedures
 Exposure controls/personal protection: Respiratory protection
 Toxicological Information: Toxicological Data
 Regulatory information: California Proposition 65
 Regulatory information: Safe Drinking Water Act (SDWA)