Safety Data Sheet

Cobalt Turquoise Deep - 507



SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Name of the substanceCobalt Turquoise DeepIdentification number269-072-0 (EC number)Registration number01-2119963939-14-0009

Product registration number Not applicable.

Issue date12-December-2011Revision date04-December-2018Supersedes date09-January-2018

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified usesColorantUses advised againstNone known.

1.3. Details of the supplier of the safety data sheet

Address Michael Harding Art Formulas LTD

Telephone +44(0)1633484700

Manufacturer/Supplier: Michael Harding Art Formulas LTD

Unit K Springvale Ind Est Cwmbran, Torfaen, NP44 5BE

United Kingdom

Telephone +44(0)1633484700

Websitewww.michaelharding.co.ukEmailaccounts@michaelharding.co.uk

EMERGENCY CHEMTREC - Domestic 1- 800-424-9300

INFORMATION

CHEMTREC - International +1 703 527 3887

24 hour Emergency (EU) +112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 as amended

Hazard summary Health injuries are not known or expected under normal use.

2.2. Label elements

Revision date: 04-December-2018

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: COBALT CHROMITE BLUE-GREEN SPINEL

Hazard pictograms None.

Signal word None.

Hazard statements None.

Precautionary statements

PreventionNot assigned.ResponseNot assigned.StorageNot assigned.DisposalNot assigned.

Supplemental label

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.

2.3. Other hazards
Substance(s) formed under the conditions of use

None known. Not applicable.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
COBALT CHROMITE BLUE-GREEN SPINEL	100	68187-11-1 269-072-0	01-2119963939-14-0009	-	
Classification: -					

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.

SECTION 4: First aid measures

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.

4.1. Description of 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.

4.2. Most important symptoms and effects, both acute and delayed

Contact with eyes may cause irritation. Inhalation of dusts may cause respiratory irritation. Contact with skin may cause irritation.

4.3. Indication of any immediate medical attention and special treatment

Not available.

SECTION 5: Firefighting measures

General fire hazards This product is not flammable.

5.1. Extinguishing media

Suitable extinguishing

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media

needed

Use extinguishing agent suitable for type of surrounding fire.

Unsuitable extinguishing

media

Not applicable.

5.2. Special hazards arising

from the substance or

mixture

None known.

5.3. Advice for firefighters

Special protective equipment for firefighters

Use protective equipment appropriate for surrounding materials.

Special fire fighting

procedures

Not a fire hazard.

Specific methods Not established.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust from

the spilled material.

For emergency responders

Keep unnecessary personnel away.

6.2. Environmental precautions

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

6.3. Methods and material 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.

See Section 8 for personal protective equipment.

6.4. Reference to other

sections

SECTION 7: Handling and storage

7.1. 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.

7.2. 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.

No detailed information on use is given, as no exposure scenarios according to Article 14.4 7.3. Specific end use(s)

Regulation (EC) 1907/2006 are required.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

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Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Metals	Туре	Value	Percent	Form	
CHROMIUM (III) AND COMPOUNDS	MAK	2 mg/m3	43 - 50%	(as Cr)	
COBALT METAL, DUST AND FUMES	STEL	0,4 mg/m3	6 - 15%	(as Co)	
	TWA	0,1 mg/m3	6 - 15%	(as Co)Inhalable fraction.	

Belgium. Exposure Limit Values.

Metals	Туре	Value	Percent	Form
CHROMIUM (III) AND COMPOUNDS	TWA	0,5 mg/m3	43 - 50%	(as Cr)
COBALT METAL, DUST AND FUMES	TWA	0,02 mg/m3	6 - 15%	(as Co)Dust and fume.

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Metals	Туре	Value	Percent	Form
CHROMIUM (III) AND COMPOUNDS	TWA	2 mg/m3	43 - 50%	(as Cr)
COBALT METAL, DUST AND FUMES	TWA	0,1 mg/m3	6 - 15%	(as Co)

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 1

Metals	Туре	Value	Percent	Form
CHROMIUM (III) AND COMPOUNDS	MAC	2 mg/m3	43 - 50%	(as Cr)

Metals	Туре	Value	Percent	Form
COBALT METAL, DUST AND FUMES	MAC	0,1 mg/m3	6 - 15%	(as Co)
Cyprus. OELs. Control of factory atmosphe	ere and dangerous si	ubstances in factor	ies regulatio	on, PI 311/73, as ame
Metals	Туре	Value	Percent	Form
COBALT METAL, DUST AND FUMES	TWA	0,1 mg/m3	6 - 15%	(as Co) Dust and fume.
Czech Republic. OELs. Government Decre	e 361			
Metals	Туре	Value	Percent	Form
CHROMIUM (III) AND COMPOUNDS	Ceiling	1,5 mg/m3	43 - 50%	(as Cr)
,	TWA	0,5 mg/m3	43 - 50%	(as Cr) Dust.
		0,5 mg/m3	43 - 50%	(as Cr)
COBALT METAL, DUST AND FUMES	Ceiling TWA	0,1 mg/m3 0,05 mg/m3	6 - 15% 6 - 15%	(as Co) (as Co)
Denmark. Exposure Limit Values				
-	Tumo	Value	Dorsont	Eaum.
Metals CHROMIUM (III) AND COMPOUNDS	Type TLV	Value 0,5 mg/m3	Percent 43 - 50%	Form (as Cr) Dust.
COBALT METAL, DUST AND FUMES	TLV	0,5 mg/m3	6 - 15%	(as Co) Dust and fume.
Estonia. OELs. Occupational Exposure Lim		_	_	-
Metals CLIDOMTHM (TIT) AND COMPOUNDS	Type	Value	Percent 12 F00/	Form
CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES	TWA TWA	2 mg/m3 0,05 mg/m3	43 - 50% 6 - 15%	(as Cr) (as Co)
COSTALL FIETURE, DOST FIND FOLIES	1007	0,03 mg/m3	0 1370	(43 60)
Finland. Workplace Exposure Limits				
<u>Metals</u>	Туре	Value	Percent	Form
CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES	TWA	0,5 mg/m3 0,02 mg/m3	43 - 50%	(as Cr)
CODALT METAL, DOST AND FUNES	TWA	0,02 1119/1113	6 - 15%	(as Co)
France. Threshold Limit Values (VLEP) for	Occupational Expos	ure to Chemicals in	n France, INI	RS ED 984
Metals	Туре	Value	Percent	Form
CHROMIUM (III) AND COMPOUNDS	VME	2 mg/m3	43 - 50%	(as Cr)
Germany. TRGS 900, Limit Values in the A	Ambient Air at the Wo	orkplace		
	Ambient Air at the Wo	orkplace Value	Percent	Form
Metals		-	Percent 43 - 50%	(as Cr) Inhalable
Metals	Туре	Value		
Metals CHROMIUM (III) AND COMPOUNDS	Type AGW	Value		(as Cr) Inhalable
Metals CHROMIUM (III) AND COMPOUNDS Greece. OELs (Decree No. 90/1999, as an	Type AGW	Value		(as Cr) Inhalable
Metals CHROMIUM (III) AND COMPOUNDS Greece. OELs (Decree No. 90/1999, as am Metals CHROMIUM (III) AND COMPOUNDS	Type AGW nended)	Value 2 mg/m3 Value 1 mg/m3	43 - 50%	(as Cr) Inhalable fraction.
Germany. TRGS 900, Limit Values in the A Metals CHROMIUM (III) AND COMPOUNDS Greece. OELs (Decree No. 90/1999, as an Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES	Type AGW nended) Type	Value 2 mg/m3 Value	43 - 50% Percent	(as Cr) Inhalable fraction.
Metals CHROMIUM (III) AND COMPOUNDS Greece. OELs (Decree No. 90/1999, as am Metals CHROMIUM (III) AND COMPOUNDS	Type AGW nended) Type TWA TWA	Value 2 mg/m3 Value 1 mg/m3 0,1 mg/m3	43 - 50% Percent 43 - 50%	(as Cr) Inhalable fraction. Form (as Cr)
Metals CHROMIUM (III) AND COMPOUNDS Greece. OELs (Decree No. 90/1999, as an Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Hungary. OELs. Joint Decree on Chemical	Type AGW nended) Type TWA TWA	Value 2 mg/m3 Value 1 mg/m3 0,1 mg/m3	43 - 50% Percent 43 - 50%	(as Cr) Inhalable fraction. Form (as Cr)
Metals CHROMIUM (III) AND COMPOUNDS Greece. OELs (Decree No. 90/1999, as am Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Hungary. OELs. Joint Decree on Chemical Metals CHROMIUM (III) AND COMPOUNDS	Type AGW nended) Type TWA TWA Safety of Workplace Type TWA	Value 2 mg/m3 Value 1 mg/m3 0,1 mg/m3 s Value 2 mg/m3	Percent 43 - 50% 6 - 15% Percent 43 - 50%	(as Cr) Inhalable fraction. Form (as Cr) (as Co) Dust and fume. Form (as Cr)
Metals CHROMIUM (III) AND COMPOUNDS Greece. OELs (Decree No. 90/1999, as am Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Hungary. OELs. Joint Decree on Chemical Metals CHROMIUM (III) AND COMPOUNDS	Type AGW nended) Type TWA TWA Safety of Workplace Type TWA STEL	Value 2 mg/m3 Value 1 mg/m3 0,1 mg/m3 s Value 2 mg/m3 0,4 mg/m3	Percent 43 - 50% 6 - 15% Percent 43 - 50% 6 - 15%	(as Cr) Inhalable fraction. Form (as Cr) (as Co) Dust and fume. Form (as Cr) (as Co)
Metals CHROMIUM (III) AND COMPOUNDS Greece. OELs (Decree No. 90/1999, as am Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Hungary. OELs. Joint Decree on Chemical Metals CHROMIUM (III) AND COMPOUNDS	Type AGW nended) Type TWA TWA Safety of Workplace Type TWA	Value 2 mg/m3 Value 1 mg/m3 0,1 mg/m3 s Value 2 mg/m3	Percent 43 - 50% 6 - 15% Percent 43 - 50%	(as Cr) Inhalable fraction. Form (as Cr) (as Co) Dust and fume. Form (as Cr)
Metals CHROMIUM (III) AND COMPOUNDS Greece. OELs (Decree No. 90/1999, as am Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES	Type AGW nended) Type TWA TWA Safety of Workplace Type TWA STEL TWA	Value 2 mg/m3 Value 1 mg/m3 0,1 mg/m3 value 2 mg/m3 0,4 mg/m3 0,1 mg/m3 0,1 mg/m3	Percent 43 - 50% 6 - 15% Percent 43 - 50% 6 - 15%	(as Cr) Inhalable fraction. Form (as Cr) (as Co) Dust and fume. Form (as Cr) (as Co)
Metals CHROMIUM (III) AND COMPOUNDS Greece. OELs (Decree No. 90/1999, as am Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Hungary. OELs. Joint Decree on Chemical Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES	Type AGW nended) Type TWA TWA Safety of Workplace Type TWA STEL TWA	Value 2 mg/m3 Value 1 mg/m3 0,1 mg/m3 value 2 mg/m3 0,4 mg/m3 0,1 mg/m3 0,1 mg/m3	Percent 43 - 50% 6 - 15% Percent 43 - 50% 6 - 15%	(as Cr) Inhalable fraction. Form (as Cr) (as Co) Dust and fume. Form (as Cr) (as Co)

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COBALT METAL, DUST AND FUMES	Туре	Value	Percent	Form
	TWA	0,02 mg/m3	6 - 15%	(as Co) Dust and fume
Ireland. Occupational Exposure Limits				
Metals	Туре	Value	Percent	Form
CHROMIUM (III) AND COMPOUNDS	TWA	2 mg/m3	43 - 50%	(as Cr)
COBALT METAL, DUST AND FUMES	TWA	0,1 mg/m3	6 - 15%	(as Co)
Italy. Occupational Exposure Limits				
Metals	Туре	Value	Percent	Form
CHROMIUM (III) AND COMPOUNDS	TWA	0,5 mg/m3	43 - 50%	(as Cr)
COBALT METAL, DUST AND FUMES	TWA	0,02 mg/m3	6 - 15%	(as Co)
Latvia. OELs. Occupational exposure limit v	values of chemical s	substances in work	environmen	ıt
Metals	Туре	Value	Percent	Form
CHROMIUM (III) AND COMPOUNDS	TWA	2 mg/m3	43 - 50%	(as Cr)
COBALT METAL, DUST AND FUMES	TWA	0,5 mg/m3	6 - 15%	(as Co)
Lithuania. OELs. Limit Values for Chemical	Substances, Gener	al Requirements		
Metals	Туре	Value	Percent	Form
CHROMIUM (III) AND COMPOUNDS	TWA	2 mg/m3	43 - 50%	(as Cr)
COBALT METAL, DUST AND FUMES	TWA	0,05 mg/m3	6 - 15%	(as Co)
Luxembourg. Binding Occupational exposu	re limit values (Anı	nex I), Memorial A		
Metals	Туре	Value	Percent	Form
CHROMIUM (III) AND COMPOUNDS	TWA	2 mg/m3	43 - 50%	(as Cr)
Netherlands. OELs (binding)				
Metals	Туре	Value	Percent	Form
	T\A/A	0,5 mg/m3	43 - 50%	(ac Cr)
CHROMIUM (III) AND COMPOUNDS	TWA	0,5 1119/1115		(as Cr)
CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES	TWA	0,02 mg/m3	6 - 15%	(as Co) Dust and fume.
· ·	TWA	0,02 mg/m3	6 - 15%	•
COBALT METAL, DUST AND FUMES	TWA	0,02 mg/m3	6 - 15% Percent	•
COBALT METAL, DUST AND FUMES Norway. Administrative Norms for Contam	TWA inants in the Workp	0,02 mg/m3		(as Co) Dust and fume.
COBALT METAL, DUST AND FUMES Norway. Administrative Norms for Contami	TWA inants in the Workp Type	0,02 mg/m3 Place Value	Percent	(as Co) Dust and fume.
COBALT METAL, DUST AND FUMES Norway. Administrative Norms for Contami Metals CHROMIUM (III) AND COMPOUNDS	TWA inants in the Workp Type TLV TLV	0,02 mg/m3 Place Value 0,5 mg/m3 0,02 mg/m3	Percent 43 - 50% 6 - 15%	(as Co) Dust and fume. Form (as Cr) (as Co) Fume.
COBALT METAL, DUST AND FUMES Norway. Administrative Norms for Contaminate Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Ordinance of the Minister of Labour and So	TWA inants in the Workp Type TLV TLV	0,02 mg/m3 Place Value 0,5 mg/m3 0,02 mg/m3	Percent 43 - 50% 6 - 15%	(as Co) Dust and fume. Form (as Cr) (as Co) Fume.
Norway. Administrative Norms for Contami Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES	TWA inants in the Workp Type TLV TLV TLV cial Policy on 6 Jun	0,02 mg/m3 place Value 0,5 mg/m3 0,02 mg/m3 10,02 mg/m3 10 are 2014 on the max	Percent 43 - 50% 6 - 15%	(as Co) Dust and fume. Form (as Cr) (as Co) Fume. issible concentrations
Norway. Administrative Norms for Contaminate Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Ordinance of the Minister of Labour and Sometals	TWA inants in the Works Type TLV TLV TLV cial Policy on 6 Jun Type	0,02 mg/m3 place Value 0,5 mg/m3 0,02 mg/m3 ne 2014 on the max Value	Percent 43 - 50% 6 - 15% imum permi	(as Co) Dust and fume. Form (as Cr) (as Co) Fume. ssible concentrations Form
COBALT METAL, DUST AND FUMES Norway. Administrative Norms for Contaminate Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Ordinance of the Minister of Labour and Sometals CHROMIUM (III) AND COMPOUNDS	TWA inants in the Works Type TLV TLV cial Policy on 6 Jun Type TWA TWA	0,02 mg/m3 place Value 0,5 mg/m3 0,02 mg/m3 ne 2014 on the max Value 0,5 mg/m3 0,02 mg/m3 0,02 mg/m3	Percent 43 - 50% 6 - 15% imum permi Percent 43 - 50%	(as Co) Dust and fume. Form (as Cr) (as Co) Fume. issible concentrations Form (as Cr)
Norway. Administrative Norms for Contaminated Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Ordinance of the Minister of Labour and Sometals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Portugal. VLES. Norm on occupational expo	TWA inants in the Works Type TLV TLV cial Policy on 6 Jun Type TWA TWA	0,02 mg/m3 place Value 0,5 mg/m3 0,02 mg/m3 ne 2014 on the max Value 0,5 mg/m3 0,02 mg/m3 0,02 mg/m3	Percent 43 - 50% 6 - 15% imum permi Percent 43 - 50%	(as Co) Dust and fume. Form (as Cr) (as Co) Fume. issible concentrations Form (as Cr)
Norway. Administrative Norms for Contaminated Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Ordinance of the Minister of Labour and Sometals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Portugal. VLES. Norm on occupational exponents	TWA inants in the Workp Type TLV TLV cial Policy on 6 Jun Type TWA TWA TWA TWA Sure to chemical agents	0,02 mg/m3 place Value 0,5 mg/m3 0,02 mg/m3 ne 2014 on the max Value 0,5 mg/m3 0,02 mg/m3 0,02 mg/m3	Percent 43 - 50% 6 - 15% imum permi Percent 43 - 50% 6 - 15%	(as Co) Dust and fume. Form (as Cr) (as Co) Fume. Sissible concentrations Form (as Cr) (as Co)
Norway. Administrative Norms for Contaminated Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Ordinance of the Minister of Labour and Sometals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Portugal. VLEs. Norm on occupational exponents	TWA inants in the Works Type TLV TLV cial Policy on 6 Jun Type TWA TWA TWA Sure to chemical as	0,02 mg/m3 place Value 0,5 mg/m3 0,02 mg/m3 ne 2014 on the max Value 0,5 mg/m3 0,02 mg/m3 0,02 mg/m3 0,02 mg/m3 gents (NP 1796) Value	Percent 43 - 50% 6 - 15% imum permi Percent 43 - 50% 6 - 15% Percent	(as Co) Dust and fume. Form (as Cr) (as Co) Fume. Sissible concentrations Form (as Cr) (as Co) Form
Norway. Administrative Norms for Contaminated Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Ordinance of the Minister of Labour and Sometals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Portugal. VLEs. Norm on occupational exponents Metals CHROMIUM (III) AND COMPOUNDS	TWA inants in the Works Type TLV TLV cial Policy on 6 Jun Type TWA TWA TWA Sure to chemical as	0,02 mg/m3 place Value 0,5 mg/m3 0,02 mg/m3 ne 2014 on the max Value 0,5 mg/m3 0,02 mg/m3 0,02 mg/m3 gents (NP 1796) Value 0,5 mg/m3	Percent 43 - 50% 6 - 15% imum permi Percent 43 - 50% 6 - 15% Percent 43 - 50%	(as Co) Dust and fume. Form (as Cr) (as Co) Fume. issible concentrations Form (as Cr) (as Co) Form (as Cr) (as Co)
Norway. Administrative Norms for Contaminate Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Ordinance of the Minister of Labour and Sometals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES	TWA inants in the Works Type TLV TLV cial Policy on 6 Jun Type TWA TWA sure to chemical as Type TWA TWA TWA TWA	0,02 mg/m3 place Value 0,5 mg/m3 0,02 mg/m3 ne 2014 on the max Value 0,5 mg/m3 0,02 mg/m3 0,02 mg/m3 2 mg/m3 2 mg/m3 0,02 mg/m3 0,02 mg/m3	Percent 43 - 50% 6 - 15% imum permi Percent 43 - 50% 6 - 15% Percent 43 - 50% 43 - 50% 43 - 50% 6 - 15%	(as Co) Dust and fume. Form (as Cr) (as Co) Fume. Sissible concentrations Form (as Cr) (as Co) Form (as Cr) (as Co)
Norway. Administrative Norms for Contaminated Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Ordinance of the Minister of Labour and Sometals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Portugal. VLEs. Norm on occupational exponents Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Romania. OELs. Protection of workers from	TWA inants in the Works Type TLV TLV cial Policy on 6 Jun Type TWA TWA sure to chemical as Type TWA TWA TWA TWA	0,02 mg/m3 place Value 0,5 mg/m3 0,02 mg/m3 ne 2014 on the max Value 0,5 mg/m3 0,02 mg/m3 0,02 mg/m3 2 mg/m3 2 mg/m3 0,02 mg/m3 0,02 mg/m3	Percent 43 - 50% 6 - 15% imum permi Percent 43 - 50% 6 - 15% Percent 43 - 50% 43 - 50% 43 - 50% 6 - 15%	(as Co) Dust and fume. Form (as Cr) (as Co) Fume. Sissible concentrations Form (as Cr) (as Co) Form (as Cr) (as Co)
Norway. Administrative Norms for Contaminated Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Ordinance of the Minister of Labour and Sometals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES Portugal. VLEs. Norm on occupational exponents Metals CHROMIUM (III) AND COMPOUNDS COBALT METAL, DUST AND FUMES COBALT METAL, DUST AND FUMES	TWA inants in the Workp Type TLV TLV cial Policy on 6 Jun Type TWA TWA sure to chemical age Type TWA TWA TWA TWA TWA TWA	0,02 mg/m3 place Value 0,5 mg/m3 0,02 mg/m3 ne 2014 on the max Value 0,5 mg/m3 0,02 mg/m3 0,02 mg/m3 2 mg/m3 2 mg/m3 0,02 mg/m3 ical agents at the value	Percent 43 - 50% 6 - 15% imum permi Percent 43 - 50% 6 - 15% Percent 43 - 50% 43 - 50% 43 - 50% 6 - 15% workplace	(as Co) Dust and fume. Form (as Cr) (as Co) Fume. Sissible concentrations Form (as Cr) (as Co) Form (as Cr) (as Co)

Gevision date: 04-December-2018

<u>Metals</u>		Ту	ре	Value	Percent	Form
		TV	VA	0,05 mg/m3	6 - 15%	(as Co)
Slovakia. OELs. Regula	ation No. 300/20	07 concerning	protection	of health in work	with chem	ical agents
Metals		Τv	ре	Value	Percent	Form
COBALT METAL, DUST A	ND FUMES		VA	0,05 mg/m3	6 - 15%	(as Co)
Slovenia. OELs. Regula	ations concerning	nrotection of	workers an	ainst risks due to	n exnosure i	to chemicals while
Metals		· -	уре	Value	Percent	Form
CHROMIUM (III) AND CO	OMPOUNDS		VA	2 mg/m3	43 - 50%	(as Cr)
COBALT METAL, DUST A			VA	0,1 mg/m3	6 - 15%	(as Co) Inhalable fraction.
Spain. Occupational E	xposure Limits					
Metals		Ту	ре	Value	Percent	Form
CHROMIUM (III) AND CO)MPOUNDS	TV	VA	2 mg/m3	43 - 50%	(as Cr) Dust.
COBALT METAL, DUST A		TV	VA	0,02 mg/m3	6 - 15%	(as Co)
Sweden. OELs. Work I	Environment Auth	ority (AV), Occ	upational I	Exposure Limit Va	alues (AFS 2	2015:7)
Metals		Ty	ре	Value	Percent	Form
CHROMIUM (III) AND CO	MPOUNDS	TV	VA	0,5 mg/m3	43 - 50%	(as Cr) Total dust.
COBALT METAL, DUST A	ND FUMES	TV	VA	0,02 mg/m3	6 - 15%	(as Co) Inhalable of
Metals CHROMIUM (III) AND CC COBALT METAL, DUST A		TV	vpe VA VA	Value 0,5 mg/m3 0,05 mg/m3	Percent 43 - 50% 6 - 15%	(as Cr) Inhalable d (as Co) Dust/aeros inhalable.
UK. EH40 Workplace E	Exposure Limits (WELs)				duste
Metals		Ty	ре	Value	Percent	Form
CHROMIUM (III) AND CO			VA	0,5 mg/m3	43 - 50%	
COBALT METAL, DUST A	ND FUMES	TV	VA	0,1 mg/m3	6 - 15%	(as Co)
EU. Indicative Exposu	re Limit Values in	Directives 91/	322/EEC, 2	2000/39/EC, 200	6/15/EC, 2	009/161/EU
Metals		Ty	ре	Value	Percent	Form
CHROMIUM (III) AND CO	MPOUNDS	TV	VA	2 mg/m3	43 - 50%	(as Cr)
ogical limit values Czech Republic. Limit 2, Government Decree Metals		ators of Biologi Form	-	re Tests in Urine	and Blood, Sampling	•
CHROMIUM (III) AND COMPOUNDS	0,03 mg/g	(as Cr)		omium Creatinine in urine		,
* - For sampling details,	please see the sour	ce document.		unite		
France. Biological indi Metals	•			e for Research ar nant Specimen	nd Security Sampling	
COBALT METAL, DUST A		(as Co)	Cobalt	Urine	*	•
FUMES	e µg/.	(45 55)	Cobaic	Offic		

Cobalt

Blood

(as Co)

1 μg/l

 $\ensuremath{^*}$ - For sampling details, please see the source document.

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Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices

Metals	Value	Form	Determinan	t Specimen	Sampling Time	
COBALT METAL, DUST AN FUMES	ID 0,03 mg/g	(as Co)	Cobalt	Creatinine in urine	*	
CHROMIUM (III) AND COMPOUNDS	0,02 mg/g	(as Cr)	chromium	Creatinine in urine	*	

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

Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2

Metals	Value	Form	Determinant	Specimen	Sampling Time
COBALT METAL, DUST AND FUMES	20,03 μg/g	(as Co)	Cobalt	Creatinine in urine	*
	30 μg/l	(as Co)	Cobalt	Urine	*

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

Spain. Biological Limit Metals	t Values (VLBs), Value	Occupational Ex Form	oposure Limits fo Determinant		Agents, Table 4 Sampling Time
COBALT METAL, DUST A FUMES	ND 15 μg/l	(as Co)	Cobalto	Urine	*
	1 μg/l	(as Co)	Cobalto	Blood	*
CHROMIUM (III) AND COMPOUNDS	25 μg/l	(as Cr)	Cromo total	Urine	*
	10 μg/l	(as Cr)	Cromo total	Urine	*

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

Switzerland. BAT-Werte (Biological Limit Values in the Workplace as per SUVA) Metals **Value** Form Specimen Sampling Time

COBALT METAL, DUST AND 30 µg/l (as Co) Urine

UK. EH40 Biological Monitoring Guidance Values (BMGVs)

Metals	Value	Form	Determinant	Specimen	Sampling Time	
CHROMIUM (III) AND	10 umol/mol	(as Cr)	Chromium	Creatinine in	*	
COMPOUNDS				urine		

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

Recommended	monitoring
procedures	

Not available.

(DNELs)

Derived no effect levels

Not available.

Predicted no effect

Not available.

concentrations (PNECs)

8.2. Exposure controls

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

General information Not available.

Eye/face protection Safety glasses with side-shields.

Skin protection

Rubber or plastic gloves. PVC disposable gloves. Use impervious gloves. - Hand protection Normal work clothing (long sleeved shirts and long pants) is recommended. - Other

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.

Thermal hazards Not applicable.

Hygiene measures Use personal protective equipment as required. Handle in accordance with good industrial hygiene

and safety practices.

Environmental exposure

controls

Contain spills and prevent releases and observe national regulations on emissions.

FUMES

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

AppearancePowder.Physical stateSolid.FormPowder.Colourblue greenOdourNone.

Odour threshold Not available.

pH 7,3 (Shepherd Color Test Method 101)

Melting point/freezing point Not applicable

Not applicable.

Initial boiling point and

boiling range

Not applicable

Flash point Not applicable.

Fuaporation rate Not applicable.

Not applicable.

Not applicable.

Not applicable. Not applicable.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower Not applicable.

(%)

Flammability limit -

upper (%)

Not applicable.

Vapour pressure Not applicable

Not applicable.

Vapour density Not applicable

Not applicable.

Relative density Not available.

Solubility(ies)

Solubility (water) Negligible

Negligible

Partition coefficient

(n-octanol/water)

Not applicable.

Auto-ignition temperature Not applicable.

Decomposition temperature Not applicable Not applicable.

Not applicable
Not available.

Explosive propertiesNot available. **Oxidising properties**Not available.

9.2. Other information

Specific gravity See tech data sheet. **Loose Packing Density** See tech data sheet.

SECTION 10: Stability and reactivity

10.1. Reactivity None known.

10.2. Chemical stability Stable under normal temperature conditions and recommended use.

10.3. Possibility of hazardous Hazardous polymerisation does not occur.

reactions

Viscosity

10.4. Conditions to avoid None known.10.5. Incompatible materials None known.

10.6. Hazardous No hazardous decomposition products are known.

decomposition products

SECTION 11: Toxicological information

General information Not available. **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 Product dust may be irritating to eyes, skin and respiratory system.

11.1. Information on toxicological effects

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

Product Species Test Results

COBALT CHROMITE BLUE-GREEN SPINEL (CAS 68187-11-1)

Inhalation

LD50 Rat Not Tested

Oral

LD50 Rat > 10000 mg/kg Shepherd Color Company

Contact with skin may cause irritation. Skin corrosion/irritation

Serious eye damage/eye

irritation

May irritate eyes.

Respiratory sensitisation No data available. Skin sensitisation 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 Not available. No data available Reproductive toxicity Specific target organ toxicity No data available.

- single exposure

Specific target organ toxicity

- repeated exposure

No data available.

Aspiration hazard Not applicable. Mixture versus substance Not applicable. information

Other 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.

SECTION 12: Ecological information

12.1. Toxicity Not expected to be harmful to aquatic organisms. 12.2. Persistence and The product is not expected to be biodegradable.

degradability

12.3. Bioaccumulative

potential

The product does not contain any substances expected to be bioaccumulating.

Partition coefficient n-octanol/water (log Kow)

Not applicable.

Bioconcentration factor (BCF) Not available. 12.4. Mobility in soil No data available. No data available. Mobility in general 12.5. Results of PBT Not applicable.

and vPvB Not applicable. assessment Not applicable. 12.6. Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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Residual waste Dispose of in accordance with local regulations.

9 / 11

Contaminated packaging Since emptied containers retain product residue, follow label warnings even after container is

emptied.

EU waste codeWaste codes should be assigned by the user based on the application for which the product was

used.

Disposal All wastes must be handled in accordance with local, state and federal regulations.

methods/information

SECTION 14: Transport information

ADR

14.1. - 14.6.: Not regulated as dangerous goods.

RID

14.1. - 14.6.: Not regulated as dangerous goods.

ADN

14.1. - 14.6.: Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

14.7. Transport in bulk

Not available.

according to Annex II of MARPOL 73/78 and the IBC

Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

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National regulationsThis substance is not classified as dangerous according to European Union legislation.

15.2. Chemical safety

assessment

Not available.

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).

SECTION 16: Other information

List of abbreviations Not available. References Not available. **Information on evaluation** Not available. method leading to the

Full text of any H-statements

None.

not written out in full under Sections 2 to 15

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Revision information

classification of mixture

SECTION 2: Hazards identification: Hazard statements

SECTION 2: Hazards identification: Disposal SECTION 2: Hazards identification: Prevention

SECTION 2: Hazards identification: Supplemental label information Composition / Information on Ingredients: Potential Compounds Formed SECTION 8: Exposure controls/personal protection: General information SECTION 8: Exposure controls/personal protection: Respiratory protection

Toxicological Information: Toxicological Data

SECTION 11: Toxicological information: Aspiration hazard

HazReg Data: North America

Training information Not available.

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