

Issue Date 28-May-2015

Revision Date 18-Nov-2016

Version 4

## Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

**Product Code** TS1388  
*Product Name* Cobalt-based Alloy Powder (Co-Cr-Mo)

**Synonyms** Co-Cr-Mo  
 Contains Cobalt, Nickel

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

**Recommended Use** Cobalt alloy product manufacture

**Uses advised against**

### 1.3. Details of the supplier of the safety data sheet

**Manufacturer Address**  
 Stanford Advanced Materials, 23661 Birtcher Dr. Lake Forest, CA 92630 USA

### 1.4. Emergency telephone number

**Emergency Telephone** +1 (949) 407-8904

## Section 2: HAZARDS IDENTIFICATION

This product is an article and, as such, does not present a hazard to human health by inhalation or ingestion

### 2.1. Classification of the substance or mixture

*Regulation (EC) No 1272/2008*

Acute toxicity - Oral	Category 4
Respiratory sensitisation	Category 1B
Skin sensitisation	Category 1
Carcinogenicity	Category 1B
Reproductive toxicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1
Chronic aquatic toxicity	Category 4

### 2.2. Label elements

#### Emergency Overview

**Danger**

**Hazard statements**

Harmful if swallowed

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction

May cause cancer

Suspected of damaging fertility or the unborn child

Causes damage to the respiratory tract through prolonged or repeated exposure if inhaled

May cause long lasting harmful effects to aquatic life



**Appearance** Various massive product forms

**Physical state** Solid

**Odour** Odourless

#### Precautionary Statements - Prevention

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wear protective gloves

If skin irritation or rash occurs: Get medical advice/attention

If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

#### Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

#### 2.3 Hazards not otherwise classified (HNOC)

Not applicable

#### Other Information

When product is subjected to welding, burning, melting, sawing, brazing, grinding, buffing, polishing, or other similar heat-generating processes, the following potentially hazardous airborne particles and/or fumes may be generated: Hexavalent Chromium (Chromium VI) may cause lung, nasal, and/or sinus cancer, Soluble molybdenum compounds such as molybdenum trioxide may cause lung irritation.

## Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Cobalt	213-158-0	7440-48-4	35-70
Chromium	231-157-5	7440-47-3	20-30
Nickel	231-111-4	7440-02-0	0-25
Tungsten	231-143-9	7440-33-7	0 - 15
Molybdenum	231-107-2	7439-98-7	0 - 10
Manganese	231-105-1	7439-96-5	0 - 5
Iron	231-096-4	7439-89-6	0 - 5

## Section 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

#### Inhalation

If excessive amounts of smoke, fume, or particulate are inhaled during processing, remove to fresh air and consult a qualified health professional.

#### Skin Contact

In the case of skin irritation or allergic reactions see a doctor.

#### Eye contact

In the case of particles coming in contact with eyes during processing, treat as with any foreign object.

**Ingestion** Not an expected route of exposure.

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

**Symptoms** May cause allergic skin reaction. May cause acute gastrointestinal effects if swallowed.

#### **4.3. Indication of any immediate medical attention and special treatment needed**

**Note to doctors** Treat symptomatically.

## **Section 5: FIRE FIGHTING MEASURES**

### **5.1. Extinguishing media**

#### **Suitable extinguishing media**

None in massive form, flammable as finely divided particles. Smother with salt (NaCl) or class D dry powder fire extinguisher.

#### **Unsuitable extinguishing media**

Do not spray water on burning metal as an explosion may occur. This explosive characteristic is caused by the hydrogen and steam generated by the reaction of water with the burning material

### **5.2. Special hazards arising from the substance or mixture**

Intense heat. Very fine, high surface area material resulting from grinding, buffing, polishing, or similar processes of this product may ignite spontaneously at room temperature. **WARNING:** Fine particles resulting from grinding, buffing, polishing, or similar processes of this product may form combustible dust-air mixtures. Keep particles away from all ignition sources including heat, sparks, and flame. Prevent dust accumulations to minimise combustible dust hazard.

**Hazardous combustion products** Hexavalent Chromium (Chromium VI) may cause lung, nasal, and/or sinus cancer, Soluble molybdenum compounds such as molybdenum trioxide may cause lung irritation.

### **5.3. Advice for firefighters**

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment as required.

## **Section 6: ACCIDENTAL RELEASE MEASURES**

### **6.1. Personal precautions, protective equipment and emergency procedures**

#### **Personal precautions**

Use personal protective equipment as required.

#### **For emergency responders**

Use personal protective equipment as required.

### **6.2. Environmental precautions**

Not applicable to massive product.

### **6.3. Methods and material for containment and cleaning up**

**Methods for containment** Not applicable to massive product.

**Methods for cleaning up** Not applicable to massive product.

### **6.4. Reference to other sections**

See Section 12: ECOLOGICAL INFORMATION.

## **Section 7: HANDLING AND STORAGE**

**7.1. Precautions for safe handling****Advice on safe handling**

Very fine, high surface area material resulting from grinding, buffing, polishing, or similar processes of this product may ignite spontaneously at room temperature. WARNING: Fine particles resulting from grinding, buffing, polishing, or similar processes of this product may form combustible dust-air mixtures. Keep particles away from all ignition sources including heat, sparks, and flame. Prevent dust accumulations to minimise combustible dust hazard.

**General Hygiene Considerations**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities****Storage Conditions**

Keep chips, turnings, dust, and other small particles away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity).

**Incompatible materials**

Dissolves in hydrofluoric acid.

**7.3. Specific end use(s)****Risk Management Methods (RMM)**

The information required is contained in this Safety Data Sheet.

**Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1. Control parameters**

Chemical Name	European Union	United Kingdom	France	Spain	Germany
Cobalt 7440-48-4	-	STEL: 0.3 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>	-	TWA: 0.02 mg/m <sup>3</sup>	Skin
Chromium 7440-47-3	TWA: 2 mg/m <sup>3</sup>	STEL: 1.5 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>
Nickel 7440-02-0	-	STEL: 1.5 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>	Skin
Tungsten 7440-33-7	-	STEL: 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	-	STEL: 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	-
Molybdenum 7439-98-7	-	-	-	TWA: 10 mg/m <sup>3</sup> TWA: 3 mg/m <sup>3</sup>	-
Manganese 7439-96-5	-	STEL: 1.5 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.02 mg/m <sup>3</sup> Ceiling / Peak: 1.6 mg/m <sup>3</sup> Ceiling / Peak: 0.16 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>
Iron 7439-89-6	-	-	-	-	-
Chemical Name	Italy	Portugal	Netherlands	Finland	Denmark
Cobalt 7440-48-4	-	TWA: 0.02 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>
Chromium 7440-47-3	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>
Nickel 7440-02-0	-	TWA: 1.5 mg/m <sup>3</sup>	-	TWA: 1 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup>
Tungsten 7440-33-7	-	STEL: 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	-	TWA: 5 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup>
Molybdenum 7439-98-7	-	TWA: 10 mg/m <sup>3</sup> TWA: 3 mg/m <sup>3</sup>	-	TWA: 0.5 mg/m <sup>3</sup>	-
Manganese 7439-96-5	-	TWA: 0.2 mg/m <sup>3</sup>	-	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>
Iron 7439-89-6	-	-	-	-	-
Chemical Name	Austria	Switzerland	Poland	Norway	Ireland

Cobalt 7440-48-4	Skin	Skin TWA: 0.05 mg/m <sup>3</sup>	STEL: 0.2 mg/m <sup>3</sup> TWA: 0.02 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup> STEL: 0.06 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>
Chromium 7440-47-3	TWA: 2 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> STEL: 1.5 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>
Nickel 7440-02-0	-	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.25 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup> STEL: 0.15 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>
Tungsten 7440-33-7	STEL 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup> STEL: 10 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup> STEL: 10 mg/m <sup>3</sup>
Molybdenum 7439-98-7	STEL 20 mg/m <sup>3</sup> TWA: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>	STEL: 10 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup>	-	TWA: 0.5 mg/m <sup>3</sup>
Manganese 7439-96-5	STEL 2 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.3 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup> STEL: 3 ppm STEL: 0.3 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup>
Iron 7439-89-6	-	-	-	-	-

**Derived No Effect Level (DNEL)** No DNELs are available for this product as a whole

**Predicted No Effect Concentration (PNEC)** No PNECs are available for this product as a whole.

## 8.2. Exposure controls

**Engineering Controls** Avoid generation of particulates.

### Personal protective equipment

#### Eye/face protection

When airborne particles may be present, appropriate eye protection is recommended. For example, tight-fitting goggles, foam-lined safety glasses or other protective equipment that shield the eyes from particles.

#### Skin and body protection

Wear fire/flammable resistant/retardant clothing. Cut-resistant gloves and/or protective clothing may be appropriate when sharp surfaces are present.

#### Respiratory protection

When particulates/fumes/gases are generated and if exposure limits are exceeded or irritation is experienced, proper approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**Environmental exposure controls** Section 6: ACCIDENTAL RELEASE MEASURES.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

<b>Physical state</b>	Solid	<b>Odour</b>	Odourless
<b>Appearance</b>	Various massive product forms	<b>Odour threshold</b>	Not applicable
<b>Colour</b>	metallic grey Silver		
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
<b>pH</b>	-		
<b>Melting point/freezing point</b>	1420 - 1450 °C / 2590 - 2650 °F		
<b>Boiling point / boiling range</b>	-	Not applicable	
<b>Flash point</b>	-	Not applicable	
<b>Evaporation rate</b>	-	Not applicable	
<b>Flammability (solid, gas)</b>	-	None in massive form, flammable as finely divided particles	
<b>Flammability Limit in Air</b>			
<b>Upper flammability limit:</b>		-	
<b>Lower flammability limit</b>		-	
<b>Vapour pressure</b>	-	Not applicable	
<b>Vapour density</b>	-	Not applicable	
<b>Specific Gravity</b>	7-9		
<b>Water solubility</b>	Insoluble	Not applicable	
<b>Solubility(ies)</b>		Not applicable	

Partition coefficient	-	Not applicable
Autoignition temperature	-	Not applicable
Decomposition temperature	-	Not applicable
Kinematic viscosity	-	Not applicable
Dynamic viscosity	-	Not applicable
Explosive properties	Not applicable	
Oxidising properties	Not applicable	

**9.2. Other information**

Softening point	-
Molecular weight	-
VOC Content (%)	Not applicable
Density	-
Bulk density	-

## Section 10: STABILITY AND REACTIVITY

**10.1. Reactivity**

Not applicable

**10.2. Chemical stability**

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

**10.3. Possibility of hazardous reactions****Hazardous polymerisation**

Hazardous polymerisation does not occur.

**Possibility of Hazardous Reactions**

None under normal processing.

**10.4. Conditions to avoid**

Dust formation and dust accumulation.

**10.5. Incompatible materials**

Dissolves in hydrofluoric acid.

**10.6. Hazardous decomposition products**

When product is subjected to welding, burning, melting, sawing, brazing, grinding, buffing, polishing, or other similar heat-generating processes, the following potentially hazardous airborne particles and/or fumes may be generated: Hexavalent Chromium (Chromium VI) may cause lung, nasal, and/or sinus cancer, Soluble molybdenum compounds such as molybdenum trioxide may cause lung irritation.

## Section 11: TOXICOLOGICAL INFORMATION

**11.1. Information on toxicological effects****Product Information**

Inhalation	Not an expected route of exposure for product in massive form.
Eye contact	Not an expected route of exposure for product in massive form.
Skin Contact	May cause sensitisation by skin contact.
Ingestion	Not an expected route of exposure for product in massive form.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Cobalt	550 mg/kg bw	>2000 mg/kg bw	<0.05 mg/L
Chromium	> 3400 mg/kg bw	-	> 5.41 mg/L
Nickel	> 9000 mg/kg bw	-	> 10.2 mg/L
Tungsten	> 2000 mg/kg bw	> 2000 mg/kg bw	> 5.4 mg/L
Molybdenum	> 2000 mg/kg bw	> 2000 mg/kg bw	> 5.10 mg/L
Manganese	>2000 mg/kg bw	-	>5.14 mg/L
Iron	98,600 mg/kg bw	-	> 0.25 mg/L

### Information on toxicological effects

**Symptoms** May cause sensitisation by skin contact. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause acute gastrointestinal effects if swallowed.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Acute toxicity** Harmful if swallowed. Cobalt-containing powders may be fatal if inhaled.

**Skin corrosion/irritation** Product not classified.

**Serious eye damage/eye irritation** Product not classified.

**Sensitisation** May cause sensitisation by skin contact. Cobalt-containing alloys may cause sensitization by inhalation.

**Germ cell mutagenicity** Product not classified.

**Carcinogenicity** May cause cancer by inhalation.

Chemical Name	ACGIH	IARC	NTP	OSHA
Cobalt 7440-48-4	A3	Group 2A Group 2B	Known	X
Chromium 7440-47-3		Group 3		
Nickel 7440-02-0		Group 1 Group 2B	Known Reasonably Anticipated	X

**Reproductive toxicity** Possible risk of impaired fertility.

**STOT - single exposure** Product not classified.

**STOT - repeated exposure** Causes disorder and damage to the: Respiratory System.

**Aspiration hazard** Product not classified.

## Section 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

This product as shipped is classified for aquatic chronic toxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to Micro-organisms	Crustacea
Cobalt	The 72 h EC50 of cobalt dichloride to <i>Pseudokirchneriella subcapitata</i> was 144 µg of Co/L.	The 96h LC50 of cobalt dichloride ranged from 1.5 mg Co/L for <i>Oncorhynchus mykiss</i> to 85 mg Co/L for <i>Danio rerio</i> .	The 3 h EC50 of cobalt dichloride for activated sludge was 120 mg of Co/L.	The 48 h LC50 of cobalt dichloride ranged from 0.61 mg Co/L for <i>Ceriodaphnia dubia</i> tested in soft, DOM-free water to >1800mg Co/L for <i>Tubifex tubifex</i> in very hard water.
Chromium	-	-	-	-
Nickel	NOEC/EC10 values range from 12.3 µg/l for	The 96h LC50s values range from 0.4 mg Ni/L for	The 30 min EC50 of nickel for activated sludge was	The 48h LC50s values range from 0.013 mg Ni/L

	Scenedesmus accuminatus to 425 µg/l for Pseudokirchneriella subcapitata.	Pimephales promelas to 320 mg Ni/L for Brachydanio rerio.	33 mg Ni/L.	for Ceriodaphnia dubia to 4970 mg Ni/L for Daphnia magna.
Tungsten	The 72 h EC50 of sodium tungstate to Pseudokirchneriella subcapitata was 31.0 mg of W/L.	The 96 h LC50 of sodium tungstate to Danio rerio was greater than 106 mg of W/L.	The 30 min EC50 of sodium tungstate for activated sludge were greater than 1000 mg/L.	The 48 h EC50 of sodium tungstate to Daphnia magna was greater than 96 mg of W/L.
Molybdenum	The 72 h EC50 of sodium molybdate dihydrate to Pseudokirchneriella subcapitata was 362.9 mg of Mo/L.	The 96 h LC50 of sodium molybdate dihydrate to Pimephales promelas was 644.2 mg/L	The 3 h EC50 of molybdenum trioxide for activated sludge was 820 mg/L.	The 48 h LC50 of sodium molybdate dihydrate to Ceriodaphnia dubia was 1,015 mg/L. The 48 h LC50 of sodium molybdate dihydrate to Daphnia magna was greater than 1,727.8 mg/L.
Manganese	The 72 h EC50 of manganese to Desmodesmus subspicatus was 2.8 mg of Mn/L.	The 96 h LC50 of manganese to Oncorhynchus mykiss was greater than 3.6 mg of Mn/L	The 3 h EC50 of manganese for activated sludge was greater than 1000 mg/L.	The 48 h EC50 of manganese to Daphnia magna was greater than 1.6 mg/L.
Iron	-	The 96 h LC50 of 50% iron oxide black in water to Danio rerio was greater than 10,000 mg/L.	The 3 h EC50 of iron oxide for activated sludge was greater than 10,000 mg/L.	The 48 h EC50 of iron oxide to Daphnia magna was greater than 100 mg/L.

**12.2. Persistence and degradability**

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**12.3. Bioaccumulative potential**

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**12.4. Mobility in soil****12.5. Results of PBT and vPvB assessment**

The PBT and vPvB criteria do not apply to inorganic substances.

**12.6. Other adverse effects**

This product as shipped is not classified for acute environmental endpoints. However, when subjected to sawing or grinding, particles may be generated that are classified for aquatic acute toxicity

## Section 13: DISPOSAL CONSIDERATIONS

**13.1. Waste treatment methods****Waste from residues/unused products**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated packaging**

None anticipated.

## Section 14: TRANSPORT INFORMATION

**IMDG**

<b>14.1 UN/ID no</b>	Not regulated
<b>14.2 Proper shipping name</b>	Not regulated
<b>14.3 Hazard Class</b>	Not regulated
<b>14.4 Packing Group</b>	Not regulated
<b>14.5 Marine pollutant</b>	Not applicable
<b>14.6 Special Provisions</b>	None



**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable

**RID**

14.1 UN/ID no Not regulated  
 14.2 Proper shipping name Not regulated  
 14.3 Hazard Class Not regulated  
 14.4 Packing Group Not regulated  
 14.5 Environmental hazard Not applicable  
 14.6 Special Provisions None

**ADR**

14.1 UN/ID no Not regulated  
 14.2 Proper shipping name Not regulated  
 14.3 Hazard Class Not regulated  
 14.4 Packing Group Not regulated  
 14.5 Environmental hazard Not applicable  
 14.6 Special Provisions None

**ICAO (air)**

14.1 UN/ID no Not regulated  
 14.2 Proper shipping name Not regulated  
 14.3 Hazard Class Not regulated  
 14.4 Packing Group Not applicable  
 14.5 Environmental hazard Not applicable  
 14.6 Special Provisions None

**IATA**

14.1 UN/ID no Not regulated  
 14.2 Proper shipping name Not regulated  
 14.3 Hazard Class Not regulated  
 14.4 Packing Group Not regulated  
 Description Not applicable  
 14.5 Environmental hazard Not applicable  
 14.6 Special Provisions None

## Section 15: REGULATORY INFORMATION

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

Chemical Name	French RG number	Title
Cobalt 7440-48-4	RG 65, RG 70, RG 70bis, RG 70ter	-
Chromium 7440-47-3	RG 10	-
Nickel 7440-02-0	RG 37ter	-
Tungsten 7440-33-7	-	-
Molybdenum 7439-98-7	-	-
Manganese 7439-96-5	-	-
Iron 7439-89-6	RG 44, RG 44bis, RG 94	-

#### European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

**Authorisations and/or restrictions on use:**

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV). This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII).

**International Inventories**

<b>DSL/NDSL</b>	Complies
<b>EINECS/ELINCS</b>	Complies
<b>ENCS</b>	Complies
<b>IECSC</b>	Complies
<b>KECL</b>	Complies
<b>PICCS</b>	Complies
<b>AICS</b>	Complies

**Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**15.2. Chemical safety assessment**

No chemical safety assessment has been performed for this product.

**Section 16: OTHER INFORMATION**

<b>Issue Date</b>	28-May-2015
<b>Revision Date</b>	18-Nov-2016
<b>Revision Note</b>	Updated Section(s): 2.

**This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006**

**Note:**

The information provided in this Material 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.

**End of Safety Data Sheet**