SAFETY DATA SHEET

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In accordance with Schedule 1 of Hazardous Products Regulations (HPR) (WHMIS 2015)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name	H-Cement
Other Means of Identification	None

Recommended use and restrictions

Recommended use	PC14 Metal surface treatment products, including galvanic and electroplating products.
Restrictions on use	Anything other than the above.

Initial Supplier Identifier

Company Identification	VISHAY MEASUREMENTS GROUP, INC.
Telephone	Post Office Box 27777 Raleigh, NC 27611 USA
E-Mail (competent person)	mm.us@vishaypg.com

Emergency telephone number

Emergency Phone No.	1-800-424-9300	CHEMTREC (24 hours)
Languages spoken	English	

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

In accordance with Schedule 1 of Hazardous Products Regulations (HPR) (WHMIS 2015)

Corrosive to Metal - Category 1
Acute toxicity (Oral) - Category 4
Acute toxicity (Dermal) - Category 4
Acute toxicity (Inhalation) - Category 4
Skin corrosion/irritation - Category 2
Eye Irritation - Category 2
Skin Sensitizer - Category 1
Respiratory sensitizer - Category 1
Specific target organ toxicity — single exposure, Category 3
Specific target organ toxicity — repeated exposure, Category 1
Germ cell mutagenicity, Category 1B
Carcinogenicity - Category 1A
Reproductive toxicity, Category 2
Aquatic toxicity, Chronic - Category 2

Label elements

Hazard Pictogram(s)

Signal Word(s): DANGER

Hazard Statement(s):

May be corrosive to metals.
Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

	May cause respiratory irritation. Causes damage to organs through prolonged or repeated exposure. May cause genetic defects. May cause cancer. Suspected of damaging fertility.
Precautionary Statement(s)	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep only in original container. Absorb spillage to prevent material damage. Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands and exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell. IF exposed: Call a POISON CENTER or doctor/physician.
Other hazards	None known

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances Not applicable

Mixtures

GHS Classification

Chemical Name	CAS No.	Concentration (%W/W)	Common name(s), synonym(s) of the substance	Hazard classification
Silicon Dioxide	14808-60-7	10 – 30	Bentoniitti; crystalline silica; quartz	Specific target organ toxicity — single exposure - Category 3 (Respiratory tract) Specific target organ toxicity — repeated exposure - Category 1 (Lungs) Carcinogenicity - Category 1A
Phosphoric Acid	7664-38-2	10 – 30	Orthophosphoric acid; trihydroxidooxidophosphorus	Corrosive to Metal - Category 1 Acute toxicity (Oral) - Category 4 Skin corrosion/irritation - Category 1B **Specific Concentration Limit** Skin corrosion/irritation - Category 1B: C ≥ 25% Skin corrosion/irritation - Category 2: 10% ≤ C < 25% Eye Irritation - Category 2: 10% ≤ C < 25%
Aluminium Oxide*	1344-28-1	5 - 10	-	Not classified as hazardous for supply.

Chromium Trioxide	1333-82-0	1 – 5	Chromic Acid; Chromium (VI) Oxide; Trioxochromium	Oxidising liquid - Category 1 Acute toxicity (Oral) - Category 3 Acute toxicity (Dermal) - Category 2 Acute toxicity (Inhalation) - Category 2 Skin corrosion/irritation - Category 1 Skin sensitization - Category 1 Respiratory sensitization - Category 1 Specific target organ toxicity — repeated exposure - Category 1 (Respiratory tract, Lungs) Germ cell mutagenicity - Category 1B Carcinogenicity - Category 1A Reproductive toxicity - Category 2 Aquatic toxicity, Acute - Category 1 Aquatic toxicity, Chronic - Category 1 **Specific Concentration Limit** Specific target organ toxicity — single exposure - Category 3: C ≥ 1%

Prescribed Concentration Ranges used for trade secret purposes (Canada Gazette, Part II, Vol. 152, No. 8)
***** See Section: 8, 15

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Self-protection of the first aider	Use personal protective equipment as required. Wear appropriate personal protective equipment, avoid direct contact. Ensure adequate ventilation. Do not breathe vapour. Avoid all contact. Contaminated clothing should be laundered before reuse.
Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Apply artificial respiration if necessary. Do not employ mouth-to-mouth method. If unconscious, place in recovery position and get medical attention immediately. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. IF exposed or concerned: Get medical advice/attention.
Skin Contact	IF ON SKIN: Remove contaminated clothing and wash all affected areas with plenty of water. Contaminated clothing should be thoroughly cleaned. If skin irritation or rash occurs: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention.
Eye Contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if eye irritation develops or persists. Obtain prompt consultation, preferably from an ophthalmologist.
Ingestion	IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Drink two glasses of water. Do not induce vomiting. Allow the patient to drink 5 - 10 g ascorbic acid (not effervescent tablets) dissolved in water. This dose can be repeated several times. Obtain medical attention.
Most important symptoms and effects, both acute and delayed	Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Causes damage to organs through prolonged or repeated exposure. Suspected of damaging fertility. May cause cancer. May cause genetic defects.
Indication of any immediate medical attention and special treatment needed	Treat symptomatically.

IF IN EYES: Chemical eye burns may require extended irrigation.
IF SWALLOWED: Get medical attention immediately. Allow the patient to drink 5 - 10 g ascorbic acid (not effervescent tablets) dissolved in water. This dose can be repeated several times.
IF ON SKIN: If the skin becomes scratched or wounded, dab it with saturated gauze pads or compresses using a freshly made up ascorbic acid solution (10 g in 100 g water).

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media	As appropriate for surrounding fire. Extinguish preferably with foam, carbon dioxide or dry chemical.
Unsuitable extinguishing Media	Do not use water jet. Direct water jet may spread the fire.
Special hazards arising from the substance or mixture	May decompose in a fire giving off toxic fumes. May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide, metal oxides/oxides and Oxides of phosphorus.
Special protective equipment and precautions for fire fighters	Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Avoid run off to waterways and sewers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Ensure adequate ventilation. Stop leak if safe to do so. Eliminate all ignition sources if safe to do so. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid all contact. Use personal protective equipment as required. See Section: 8. Avoid breathing vapours.
Environmental precautions	Avoid release to the environment. Do NOT wash away into sewer. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.
Methods and material for containment and cleaning up	Adsorb spillages onto sand, earth or any suitable adsorbent material. Neutralize with: slaked lime (calcium hydroxide), sodium carbonate, calcium carbonate or sodium bicarbonate. Use only non-sparking tools. Transfer to a container for disposal. Dispose of this material and its container as hazardous waste.
Reference to other sections	See Section: 8, 13

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Ensure adequate ventilation. Avoid all contact. Do not breathe vapour. Use personal protective equipment as required. See Section: 8. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.
Conditions for safe storage, including any incompatibilities	Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, sources of ignition and direct sunlight.
Storage temperature	Ambient. 5 - 25℃
Incompatible materials	Keep away from: Combustible materials, Alkalis, Reducing agents, Strong oxidising agents, Acids and metals. Keep away from water.
Specific end use(s)	See Section: 1.2

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational Exposure Limits	Not established.

SUBSTANCE	CAS No.	ACGIH® TLV® (ppm)		OSHA PEL (ppm)		Note
		TWA	STEL	TWA	STEL	
Silicon Dioxide	14808-60-7	0.025 mg/m³ - -	- - -	- 30 10	- - -	A2 Total Dust Respirable Dust
Phosphoric Acid	7664-38-2	1	3	1	-	-
Aluminium Oxide	1344-28-1	1 mg/m³* - -	- - -	- 15 5	- - -	DSEN Total Dust Respirable Dust
Chromium Trioxide	1333-82-0	0.5 mg/m³	-	-	-	A4

Source: ACGIH: American Conference of Governmental Industrial Hygiene. TLV: Threshold Limit Value (ACGIH) PEL (OSHA)
A2: Suspected Human Carcinogen: Human data are accepted as adequate in quality but are conflicting or insufficient to classify the agent as a confirmed human carcinogen; OR, the agent is carcinogenic in experimental animals at dose(s) , by route(s) of exposure, at site(s), of histological type(s), or by mechanism(s) considered relevant to worker exposure. The A2 is primarily when there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals with relevance to humans.
A4: Not Classifiable as a Human Carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of the lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.
* Aluminium metal
DSEN: Suspected skin sensitiser

Alberta: Occupational Health And Safety Code, 2009; Quebec: Health and Safety Work Act, 2016

SUBSTANCE	CAS No.	8-hour Occupational Exposure Limits			15-minute or ceiling (c) Occupational Exposure Limits		Note
		ppm	mg/m³	f/cc	STEL (ppm)	STEL (mg/m³)	
Silicon Dioxide	14808-60-7	-	0.025	-	-	-	Alberta
		-	0.1*	-	-	-	OEL, Respirable Mass Fraction
Aluminium Oxide	1344-28-1	-	10	-	-	-	Alberta
		-	10'	-	-	-	OEL, Total Dust
Phosphoric Acid	7664-38-2	-	1	-	-	3^	Alberta
		-	1	-	-	3	OEL

Source: Alberta: Occupational Health And Safety Code, 2009
OEL: Quebec Work Health and Safety Regulations, Health and Safety Work Act, (Chapter S – 2.1, a. 223)
* Exposure by all routes should be carefully controlled to levels as low as possible
' Value is for particulate matter containing 0% Asbestos and ≤ Crystalline Silica
^ Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required

British Columbia: Occupational Health and Safety Guidelines, 2015; Northwest Territories: Occupational Health and Safety Regulations, 2012; Yukon Territory: Occupational Health and Safety Act, 1986

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m³)	STEL (ppm)	STEL (mg/m³)	Note
Silicon Dioxide	14808-60-7	-	0.025	-	-	WEL
		-	0.05	-	-	NW, Schedule R
Aluminium Oxide	1344-28-1	-	10	-	20	NW
Phosphoric Acid	7664-38-2	-	1	-	3	WEL
		-	1	-	3	NW

Source: WEL: Occupational Health and Safety Guidelines Part 5: Chemical Agents and Biological Agents (British Columbia)
NW: WSCC, Occupational Health and Safety Regulations, Northwest Territories Volume 3
Schedule R: Advice on Additional Personal Protection (APP)

Ontario: Occupational Health and Safety Act, 1990; Saskatchewan: Occupational Health and Safety Regulations, 1996.

SUBSTANCE	CAS No.	Time Weighted Average (TWA)	STEL (ppm)	Note
Silicon Dioxide	14808-60-7	0.10	-	WEL, Respirable Mass Fraction
		0.05		SK, T20
Aluminium Oxide	1344-28-1	10 mg/m³	20 mg/m³	SK
Phosphoric Acid	7664-38-2	1 mg/m³	3 mg/m³	SK

Source: WEL: Occupational Health and Safety Act, R.R.O. 1990, Regulation 833, CONTROL OF EXPOSURE TO BIOLOGICAL OR CHEMICAL AGENTS (Ontario)
Saskatchewan (SK): Occupational Health and Safety Act, 1993. O-1.1 REG 1 Occupational Health and Safety Regulations, 1996.
T20: Applicable Laws: Section 306 and 311.

Biological limit value

Not established.

Exposure controls

Appropriate engineering controls

Ensure adequate ventilation or use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit. Eyewash bottles containing clean water or saline solution. Wash thoroughly after handling.

Individual protection measures, such as personal protective equipment (PPE)

General hygiene measures for the handling of chemicals are applicable. Avoid all contact. Do not breathe vapour. Wash hands before breaks and after work. Keep work clothes separately. Contaminated clothing should be thoroughly cleaned. Do not eat, drink or smoke at the work place.

Eye/face protection

Wear protective eye glasses for protection against liquid splashes. Wear eye protection with side protection.

Skin protection

Hand protection:
Wear impervious gloves. Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.

Body protection:
Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection

Do not use in areas without adequate ventilation. In case of inadequate ventilation wear respiratory protection. A suitable mask with filter type P may be appropriate.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Green Slurry.
Odour	No odour
Odour threshold	Not available.
pH	Not established.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	104.4℃ (Mixture)
Flash point	Not applicable.
Evaporation rate (Water = 1)	1 (BuAc = 1) (Mixture)
Flammability (solid, gas)	Not applicable - Liquid
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	23.7 mmHg @ 20℃

Vapour density	<1 (Air = 1)
Relative density	Not available.
Solubility(ies)	Miscible
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

Other information None

SECTION 10: STABILITY AND REACTIVITY

Reactivity May be corrosive to metals.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions Reacts violently with strong alkalis. Direct contact with alkalis may produce hydrogen gas. Hydrogen gas is released in contact with most metals. Exothermic reaction with water. At high temperature formation of phosphorous oxides.

Conditions to avoid Keep away from water.

Incompatible materials Keep away from: Combustible materials, Alkalis, Reducing agents, Strong oxidising agents, Acids and metals.

Hazardous decomposition product(s) May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide, and possibly chromium. Thermal decomposition may yield phosphoric oxide.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity - Ingestion Acute toxicity (Oral), Category 4: Harmful if swallowed.
Acute Toxicity Estimate Mixture Calculation: Estimated LC50 1135.2 mg/kg bw/day.

Phosphoric Acid — Acute toxicity, Category 4
LD50 (rat) 1.7 mL/100 g bw (OECD 423)

Chromium Trioxide — Acute toxicity, Category 3
LD50 (oral,rat) mg/kg: 52 (OECD 401)

Acute toxicity - Inhalation Acute toxicity (Inhalation), Category 4: Harmful if inhaled.
Acute Toxicity Estimate Mixture Calculation: Estimated LC50 16.7 mg/l.

Chromium Trioxide — Acute toxicity, Category 2
LC50 (rat) 217 mg/m³ (EPA OTS 798.1150)

Acute toxicity - Skin Contact Acute toxicity (Dermal), Category 4: Harmful in contact with skin.
Acute Toxicity Estimate Mixture Calculation: Estimated LC50 1900 mg/kg bw/day.

Chromium Trioxide — Acute toxicity, Category 2
LD50 (skin,rabbit) mg/kg: 57 (OECD 402)

Skin corrosion/irritation Skin Corrosion/Irritation, Category 2: Causes skin irritation.

Phosphoric Acid — Skin Corrosion/Irritation, Category 1
Corrosive (1500.41 - U.S. Federal Register Vol. 38, No. 187, S. 26019 from 1973-09-27)

Chromium Trioxide — Skin Corrosion/Irritation, Category 1
Corrosive to skin. (rabbit) (Unnamed, 1983)

Serious eye damage/irritation Eye Irritation, Category 2; Causes serious eye irritation.

Respiratory or skin sensitization Skin sensitization - Category 1: May cause an allergic skin reaction.;
Respiratory sensitization - Category 1: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Chromium Trioxide — Skin sensitization - Category 1; Respiratory sensitization - Category 1
No data

Germ cell mutagenicity Germ cell mutagenicity, Category 1; May cause genetic defects.

Chromium Trioxide — Germ cell mutagenicity, Category 1B
In vitro: Evidence of genotoxicity. (EU Risk Assessment Report, 2005)
In vivo: Evidence of genotoxicity. (EU Risk Assessment Report, 2005)

Carcinogenicity	Carcinogenicity, Category 1A; May cause cancer.
Silicon Dioxide	Carcinogenicity, Category 1A IARC Classification: Group 1. Carcinogenic to humans.
Chromium Trioxide	Carcinogenicity, Category 1A Animal carcinogen (EU Risk Assessment Report, 2005)
Reproductive toxicity	Reproductive toxicity, Category 2; Suspected of damaging fertility.
Chromium Trioxide	Reproductive toxicity, Category 2 Reproductive toxicity: LOAEL (mouse) mg/kg bw/day: 60. (EU Risk Assessment Report, 2005) Developmental toxicity: LOAEL (mouse) mg/kg bw/day: 60 (EU Risk Assessment Report, 2005)
STOT - single exposure	Specific target organ toxicity — single exposure, Category 3: May cause drowsiness or dizziness.
Silicon Dioxide	Specific target organ toxicity — single exposure, Category 3 No data
STOT - repeated exposure	Specific target organ toxicity — repeated exposure, Category 1; Causes damage to organs through prolonged or repeated exposure.
Silicon Dioxide	Specific target organ toxicity — repeated exposure, Category 1 Prolonged and/or massive exposure to fine fraction crystalline silica-containing dust may cause silicosis, a nodular pulmonary fibrosis caused by deposition in the lungs of fine respirable particles of crystalline silica. (Ziskind et al., 1976; IARC, 1987)
Chromium Trioxide	Specific target organ toxicity — repeated exposure, Category 1 Oral: NOAEL (rat) mg/kg bw/day: 24 (Unnamed, 1996) Inhalation: LOAEC (mouse) mg/m³ 3.63. Effects and Symptoms: Respiratory tract Irritation (Adachi S, 1986) Dermal: No data
Aspiration hazard	Based upon the available data, the classification criteria are not met.
Other information	None known.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity	Aquatic toxicity, Chronic - Category 2; Toxic to aquatic life with long lasting effects. Estimated Mixture LC50 > 1 ≤ 10 mg/l. (Fish)
Chromium Trioxide	Aquatic toxicity, Acute - Category 1; Aquatic toxicity, Chronic - Category 1 Acute: LC50 (fish) mg/l: 13 – 120 (96 hour) (Several species) (EU Risk Assessment Report, 2005) Chronic: NOEC 0.05 – 0.92 (30 Days) (Several species) (EU Risk Assessment Report, 2005)
Persistence and degradability	The methods for determining the biological degradability are not applicable to inorganic substances.
Bioaccumulative potential	No data for the mixture as a whole.
Mobility in soil	The product is predicted to have moderate mobility in soil.
Other adverse effects	None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods	Do not release undiluted and unneutralised to the sewer. Dispose of this material and its container as hazardous waste. Containers must be decontaminated in accordance with all applicable regulations. Dispose of contents in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

		ADR/RID	**IMDG**	**IATA/ICAO**
14.1	**UN number**	UN 1760	UN 1760	UN 1760
14.2	**UN proper shipping name**	CORROSIVE LIQUID N.O.S	CORROSIVE LIQUID N.O.S	CORROSIVE LIQUID N.O.S

14.3	**Transport hazard class(es)**	8	8	8
14.4	**Packing group**	III	III	III
14.5	**Environmental hazards**	Environmentally hazardous substance	Classified as a Marine Pollutant	Environmentally hazardous substance
14.6	**Special precautions for user**	See Section: 2		
14.7	**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable		

SECTION 15: REGULATORY INFORMATION

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

National regulations

CEPA, Domestic Substances List	Silicon Dioxide: Yes Phosphoric acid: Yes Aluminium Oxide: Yes Chromium Trioxide: Yes Aluminium Hydroxide: Yes Chromium Oxide: Yes Chromium (III) Hydroxide: Yes
CEPA, Priority Substances List	Chromium Trioxide: PSL 1
CEPA, List of Toxic Substances (Schedule 1)	Chromium Trioxide: Item 33
CEPA, National Pollutant Release Inventory	Aluminium Oxide: Threshold Category: 1A, Mass Threshold: 10 tonnes MPO, Concentration threshold: 1% Chromium Trioxide: Threshold Category: 1B, Mass Threshold: 50 kg MPO, Concentration threshold: 0.1% Chromium Oxide: Threshold Category: 1A, Mass Threshold: 10 tonnes MPO, Concentration threshold: 1% (Pure element: Chromium) Chromium (III) Hydroxide: Threshold Category: 1A, Mass Threshold: 10 tonnes MPO, Concentration threshold: 1% (Pure element: Chromium)
CEPA, Chromium Electroplating, Chromium Anodizing and Reverse Etching Regulations	Chromium Trioxide: Release of Hexavalent Chromium Compounds (HVCs) must be controlled by using a point source, limiting the surface tension of the solution, or using a tank cover in accordance with these Regulations, and a notice must be submitted to the Minister indicating the method used for each tank at each facility (applicable to any person using a HVC-containing solution for chromium electroplating, chromium anodising or reverse etching in a tank at a facility using >= 50 kg CrO3 per year).
CEPA, Environmental Emergency Regulations	Chromium Trioxide: Part 3: Other hazardous substance. Concentration ≥ 10% w/w. Volume (Minimum): 0.22 tonnes (metric).

Non-Regional

IARC Monographs**,** List of Classifications	Silicon Dioxide: Group 1 Chromium Trioxide: Group 1

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Not applicable – V1.0

Date of First Issue: **23 April 2018**
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References:

Existing Safety Data Sheet (SDS).
EU: Harmonised Classification(s) for Phosphoric Acid (CAS No. 7664-38-2), Chromium Trioxide (CAS No. 1333-82-0). Existing ECHA registration(s) for Phosphoric Acid (CAS No. 7664-38-2), Aluminium Oxide (CAS No. 1344-28-1), Chromium Trioxide (CAS No. 1333-82-0), Aluminium Hydroxide (CAS No. 21645-51-2), Chromium Oxide (CAS No. 1308-38-9), Chromium (III) Hydroxide (CAS No. 1308-14-1) and the Classification and Labelling Inventory for Silicon Dioxide (CAS No. 14808-60-7).

Literature References:

1. Ziskind M, Jones RN, Weill H, 1976, Silicosis. American review of respiratory disease, 113:643–665.

2. European Union Risk Assessment Report: chromium trioxide, sodium chromate, sodium dichromate, ammonium dichromate, potassium dichromate. 2005. European Chemicals Bureau. 3rd Priority List; Volume 53.
3. Adachi S et al. 1986. Effects of chromium compounds to the respiratory system. Part 4. Jpn J Ind Health 1986 (28); 283-287

LEGEND

LTEL: Long Term Exposure Limit
DNEL: Derived No Effect Level
PBT: PBT: Persistent, Bioaccumulative and Toxic
IARC: International Agency for Research on Cancer
OSHA = Occupational Safety and Health Administration

ACGIH: American conference of Governmental Industrial Hygiene
TLV: Threshold Limit Value (ACGIH)
VOC: Volatile Organic Compound
CEPA (Canadian Environmental Protection Act)

STEL: Short Term Exposure Limit
PNEC: Predicted No Effect Concentration
vPvB: very Persistent and very Bioaccumulative
NTP: National Toxicology Program
NIOSHTIC: National Institute for Occupational Safety and Health Technical Information Center
BEI: Biological Exposure Indices (ACGIH)
TWA: Time Weighted Average
EU: European Union

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