

# 10 12-7 Chromium as Cr+6 (10µg/mL in H2O)

# **High-Purity Standards**

Catalogue number: 10 12-7

Version No: 1.4 Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

# SECTION 1 IDENTIFICATION

# **Product Identifier**

Product name	10 12-7 Chromium as Cr+6 (10µg/mL in H2O)
Synonyms	10μg/mL Chromium as Cr+6 in H20
Other means of identification	10 12-7

### Recommended use of the chemical and restrictions on use

Relevant identified uses Use according to manufacturer's directions.

### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	High-Purity Standards
Address	PO Box 41727 SC 29423 United States
Telephone	843-767-7900
Fax	843-767-7906
Website	highpuritystandards.com
Email	Not Available

### Emergency phone number

• • •	
Association / Organisation	INFOTRAC
Emergency telephone numbers	1-800-535-5053
Other emergency telephone numbers	1-352-323-3500

### SECTION 2 HAZARD(S) IDENTIFICATION

#### Classification of the substance or mixture

Classification	Not Applicable			
Label elements				
Hazard pictogram(s)	Not Applicable			
SIGNAL WORD	NOT APPLICABLE			

#### Hazard statement(s)

Not Applicable

### Hazard(s) not otherwise specified

Not Applicable

# Precautionary statement(s) Prevention

Not Applicable

Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

Not Applicable

Chemwatch Hazard Alert Code: 0

Issue Date: 05/20/2017 Print Date: 05/20/2017

S GHS USA EN

# 10 12-7 Chromium as Cr+6 (10µg/mL in H2O)

### Precautionary statement(s) Disposal

### Not Applicable

### SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

#### Substances

See section below for composition of Mixtures

#### Mixtures

CAS No	%[weight]	Name		
7789-00-6	0.001 (as Cr+6)	potassium chromate		
7732-18-5	balance	water		

### SECTION 4 FIRST-AID MEASURES

### Description of first aid measures

Eye Contact	If this product comes in contact with eyes:  Vash out immediately with water.  If irritation continues, seek medical attention.  Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: <ul> <li>Flush skin and hair with running water (and soap if available).</li> <li>Seek medical attention in event of irritation.</li> </ul>
Inhalation	<ul> <li>If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>Other measures are usually unnecessary.</li> </ul>
Ingestion	<ul> <li>Immediately give a glass of water.</li> <li>First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

### Most important symptoms and effects, both acute and delayed

See Section 11

### Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

### SECTION 5 FIRE-FIGHTING MEASURES

#### Extinguishing media

- Jets of water.
- Water spray or fog.
- Foam.
- Dry chemical powder.BCF (where regulations permit).
- Carbon dioxide.

### Special hazards arising from the substrate or mixture

Fire Incompatibility None known.

### Special protective equipment and precautions for fire-fighters

Fire Fighting	<ul> <li>Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>Do not approach containers suspected to be hot.</li> <li>Cool fire exposed containers with water spray from a protected location.</li> <li>If safe to do so, remove containers from path of fire.</li> <li>Equipment should be thoroughly decontaminated after use.</li> </ul>
Fire/Explosion Hazard	<ul> <li>Non combustible.</li> <li>Not considered a significant fire risk, however containers may burn.</li> </ul>

# SECTION 6 ACCIDENTAL RELEASE MEASURES

#### Personal precautions, protective equipment and emergency procedures

See section 8

#### **Environmental precautions**

See section 12

### Methods and material for containment and cleaning up

Minor Spills	<ul> <li>Clean up all spills immediately.</li> <li>Avoid breathing vapours and contact with skin and eyes.</li> <li>Control personal contact with the substance, by using protective equipment.</li> <li>Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>Wipe up.</li> </ul>
--------------	---

Chemwatch: 9-400200

Catalogue number: **10 12-7** Version No: **1.4** 

# Issue Date: 05/20/2017 Print Date: 05/20/2017

# 10 12-7 Chromium as Cr+6 (10µg/mL in H2O)

	▶ Place in a suitable, labelled container for waste disposal.
Major Spills	<ul> <li>Clear area of personnel and move upwind.</li> <li>Alert Fire Brigade and tell them location and nature of hazard.</li> <li>Control personal contact with the substance, by using protective equipment.</li> <li>Prevent spillage from entering drains, sewers or water courses.</li> <li>Recover product wherever possible.</li> <li>Put residues in labelled containers for disposal.</li> <li>If contamination of drains or waterways occurs, advise emergency services.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

# SECTION 7 HANDLING AND STORAGE

# Precautions for safe handling

Safe handling	<ul> <li>Limit all unnecessary personal contact.</li> <li>Wear protective clothing when risk of exposure occurs.</li> <li>Use in a well-ventilated area.</li> <li>Avoid contact with incompatible materials.</li> <li>When handling, DO NOT eat, drink or smoke.</li> <li>Keep containers securely sealed when not in use.</li> <li>Avoid physical damage to containers.</li> <li>Always wash hands with soap and water after handling.</li> <li>Work clothes should be laundered separately.</li> <li>Use good occupational work practice.</li> <li>Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> </ul>
Other information	

### Conditions for safe storage, including any incompatibilities

Suitable container	<ul> <li>Polyethylene or polypropylene container.</li> <li>Packing as recommended by manufacturer.</li> <li>Check all containers are clearly labelled and free from leaks.</li> </ul>
Storage incompatibility	Avoid contamination of water, foodstuffs, feed or seed. None known

# SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### **Control parameters**

# OCCUPATIONAL EXPOSURE LIMITS (OEL)

### INGREDIENT DATA

Not Available

### EMERGENCY LIMITS

Ingredient	Material name TEEL-1			TEEL-2	TEEL-3	
potassium chromate	Potassium chromate(VI)	0.56 mg/m3		9.7 mg/m3	58 mg/m3	
In much lie mé	Law Part October 1011			Buche UDLU		
Ingredient	Original IDLH		Revised IDLH			
potassium chromate	Not Available		Not Available			
water	Not Available		Not Available			

### Exposure controls

Appropriate engineering	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering or effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that stra "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure. General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant	tegically "adds" and on system must match fit is essential to obtain possess varying
controls	Type of Contaminant:	Air Speed:
	solvent, vapours, degreasing etc., evaporating from tank (in still air)	0.25-0.5 m/s (50-100 f/min)
	aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
		1-2.5 m/s (200-500
	direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	f/min)

# 10 12-7 Chromium as Cr+6 (10µg/mL in H2O)

	Within each range the appropriate value depends on:		
	Lower end of the range	Upper end of the range	
	1: Room air currents minimal or favourable to capture	1: Disturbing room air currents	
	2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity	
	3: Intermittent, low production.	3: High production, heavy use	
	4: Large hood or large air mass in motion	4: Small hood - local control only	
Personal protection	of distance from the extraction point (in simple cases). Therefore the air spee distance from the contaminating source. The air velocity at the extraction fan,	for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of mechanical considerations, producing performance deficits within the extraction	
Eye and face protection	lenses or restrictions on use, should be created for each workplace or tas chemicals in use and an account of injury experience. Medical and first-a readily available. In the event of chemical exposure, begin eye irrigation in	rb and concentrate irritants. A written policy document, describing the wearing of sk. This should include a review of lens absorption and adsorption for the class of id personnel should be trained in their removal and suitable equipment should be mmediately and remove contact lens as soon as practicable. Lens should be remove clean environment only after workers have washed hands thoroughly. [CDC NIOS]	
Skin protection	See Hand protection below		
Hands/feet protection	the chemical is a preparation of several substances, the resistance of the glov to the application. The exact break through time for substances has to be obtained from the many choice. Personal hygiene is a key element of effective hand care. Gloves must only be thoroughly. Application of a non-perfumed moisturizer is recommended. Suitability and durability of glove type is dependent on usage. Important factor frequency and duration of contact, chemical resistance of glove material, glove thickness and dexterity Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, At When prolonged or frequently repeated contact may occur, minutes according to EN 374, AS/NZS 2161.10.1 or national equiv When only brief contact is expected, a glove with a protectio EN 374, AS/NZS 2161.10.1 or national equivalent) is recommende Some glove polymer types are less affected by movement ar Contaminated gloves should be replaced. For general applications, gloves with a thickness typically greater than 0.35 m It should be emphasised that glove thickness is not necessarily a good predic glove will be dependent on the exact composition of the glove material. Theref requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the glove solvariat therefor always be taken into account to ensure selection of the most appropriate glove Note: Depending on the activity being conducted, gloves of varying thickness Thinner gloves (down to 0.1 mm or less) may be required wf likely to give short duration protection and would normally be just for	worn on clean hands. After using gloves, hands should be washed and dried s in the selection of gloves include: S/NZS 2161.1 or national equivalent). a glove with a protection class of 5 or higher (breakthrough time greater than 240 alent) is recommended. In class of 3 or higher (breakthrough time greater than 60 minutes according to d. In this should be taken into account when considering gloves for long-term use. Im, are recommended. Tor of glove resistance to a specific chemical, as the permeation efficiency of the fore, glove selection should also be based on consideration of the task at ype and the glove model. Therefore, the manufacturers' technical data should for the task. Imay be required for specific tasks. For example: there a high degree of manual dexterity is needed. However, these gloves are only or single use applications, then disposed of. It there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or	
Body protection			
	See Other protection below         No special equipment needed when handling small quantities.         OTHERWISE:         • Overalls.         • Barrier cream.		
Other protection			

# SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Appearance	Yellow		
Physical state	Liquid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available

Version No: 1.4

# 10 12-7 Chromium as Cr+6 (10 $\mu$ g/mL in H2O)

Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water (g/L)	Miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

# SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	Product is considered stable and hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

# SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the Nevertheless, good hygiene practice requires that exposure be kept to a minimu	
Ingestion	The material has <b>NOT</b> been classified by EC Directives or other classification stanimal or human evidence.	stems as "harmful by ingestion". This is because of the lack of corroborating
Skin Contact	The material is not thought to produce adverse health effects or skin irritation fo Nevertheless, good hygiene practice requires that exposure be kept to a minimu	5 ( <b>)</b>
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives by tearing or conjunctival redness (as with windburn).	), direct contact with the eye may produce transient discomfort characterised
Chronic	Long-term exposure to the product is not thought to produce chronic effects adv nevertheless exposure by all routes should be minimised as a matter of course.	erse to the health (as classified by EC Directives using animal models);
	a d	
10 12-7 Chromium as Cr+6	TOXICITY	IRRITATION
(10µg/mL in H2O)	Not Available	Not Available
	TOXICITY	IRRITATION
potassium chromate	Dermal (rabbit) LD50: 960 mg/kg <sup>[1]</sup>	Skin (human): Highly irritating &
	Oral (rat) LD50: 50-500 mg/kg] <sup>[2]</sup>	
	ΤΟΧΙΟΙΤΥ	IRRITATION
water	Not Available	Not Available
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. extracted from RTECS - Register of Toxic Effect of chemical Substances	Value obtained from manufacturer's SDS. Unless otherwise specified data
POTASSIUM CHROMATE	The following information refers to contact allergens as a group and may not be Asthma-like symptoms may continue for months or even years after exposure to the	

	WARNING: This substance has been classified by the IARC as Group 1: CARCINOGENIC TO HUMANS. Oral (rat) LD50: 50-500 mg/kg corrosive [CCINFO-Baker]			
WATER	No significant acute toxicological data identified in literature search.			
Acute Toxicity	Carcinogenicity			
Skin Irritation/Corrosion	$\otimes$	Reproductivity	$\odot$	

Version No: 1.4

# 10 12-7 Chromium as Cr+6 (10µg/mL in H2O)

Serious Eye Damage/Irritation	$\otimes$	STOT - Single Exposure	$\otimes$
Respiratory or Skin sensitisation	$\otimes$	STOT - Repeated Exposure	0
Mutagenicity	0	Aspiration Hazard	0
			<ul> <li>Data available but does not fill the criteria for classification</li> <li>Data available to make classification</li> </ul>

✓ – Data available to make classification
 Not Available to make classification

### **SECTION 12 ECOLOGICAL INFORMATION**

# Toxicity

10 12-7 Chromium as Cr+6	ENDPOINT TES		TEST DURATION (HR)		SPECIES	VALUE		SOURCE	
(10µg/mL in H2O)	Not Applicable		Not Applicable		Not Applicable	Not Applic	able	Not Appli	icable
	ENDPOINT	TE	ST DURATION (HR)	SPEC	IES		VALUE	\$	SOURCE
	LC50	96		Fish			23.2mg/L	4	4
	EC50	48		Crust	acea		0.0153mg/L	4	4
potassium chromate	EC50	72		Algae	or other aquatic plants		0.23mg/L	4	4
	BCF	48		Algae or other aquatic plants		2mg/L	4	4	
	EC50	96		Crustacea		0.00739mg/L	4	4	
	NOEC	48		Algae	or other aquatic plants		0.00001mg/L	4	4
water	ENDPOINT		TEST DURATION (HR)		SPECIES	VALUE		SOURCI	E
Hator	Not Applicable		Not Applicable		Not Applicable	Not Applic	able	Not Appli	icable
Legend:			oxicity Data 2. Europe ECHA Re Data (Estimated) 4. US EPA, Ecc						

#### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air		
water	LOW	LOW		

#### **Bioaccumulative potential**

Ingredient	Bioaccumulation
water	LOW (LogKOW = -1.38)

# Mobility in soil

Ingredient	Mobility
water	LOW (KOC = 14.3)

#### SECTION 13 DISPOSAL CONSIDERATIONS

#### Waste treatment methods Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: Reduction Reuse Recycling Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Product / Packaging Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. disposal DO NOT allow wash water from cleaning or process equipment to enter drain It may be necessary to collect all wash water for treatment before disposal. In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. Where in doubt contact the responsible authority. Recycle wherever possible. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material). Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

### Issue Date: 05/20/2017 Print Date: 05/20/2017

### 10 12-7 Chromium as Cr+6 (10µg/mL in H2O)

#### **SECTION 14 TRANSPORT INFORMATION**

#### Labels Required

Marine Pollutant NO

Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code Not Applicable

#### **SECTION 15 REGULATORY INFORMATION**

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

#### POTASSIUM CHROMATE(7789-00-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC	US - Pennsylvania - Hazardous Substance List
Monographs	US - Rhode Island Hazardous Substance List
US - Alaska Limits for Air Contaminants	US - Washington Permissible exposure limits of air contaminants
US - California - Proposition 65 - Priority List for the Development of MADLs for Chemicals	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
Causing Reproductive Toxicity	US ACGIH Threshold Limit Values (TLV)
US - California Permissible Exposure Limits for Chemical Contaminants	US ACGIH Threshold Limit Values (TLV) - Carcinogens
US - California Proposition 65 - Carcinogens	US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)
US - California Proposition 65 - No Significant Risk Levels (NSRLs) for Carcinogens	US Clean Air Act - Hazardous Air Pollutants
US - California Proposition 65 - Reproductive Toxicity	US CWA (Clean Water Act) - List of Hazardous Substances
US - Hawaii Air Contaminant Limits	US CWA (Clean Water Act) - Priority Pollutants
US - Massachusetts - Right To Know Listed Chemicals	US CWA (Clean Water Act) - Toxic Pollutants
US - Michigan Exposure Limits for Air Contaminants	US EPCRA Section 313 Chemical List
US - Minnesota Permissible Exposure Limits (PELs)	US National Toxicology Program (NTP) 14th Report Part A Known to be Human Carcinogens
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Carcinogens	US OSHA Permissible Exposure Levels (PELs) - Table Z1
	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Mutagens	

US - Oregon Permissible Exposure Limits (Z-1)

US - Oregon Permissible Exposure Limits (Z-2)

US - Pennsylvania - Hazardous Substance List

WATER(7732-18-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

### Federal Regulations

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

#### SECTION 311/312 HAZARD CATEGORIES

Immediate (acute) health hazard	No
Delayed (chronic) health hazard	No
Fire hazard	No
Pressure hazard	No
Reactivity hazard	No

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

Name	Reportable Quantity in Pounds (lb)	Reportable Quantity in kg
Potassium chromate	10	4.54

### State Regulations

#### US. CALIFORNIA PROPOSITION 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm

### US - CALIFORNIA PREPOSITION 65 - CARCINOGENS & REPRODUCTIVE TOXICITY (CRT): LISTED SUBSTANCE

Chromium (hexavalent compounds) Listed

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (potassium chromate; water)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Υ
Japan - ENCS	N (water)

Version No: 1.4

Page 8 of 8

### 10 12-7 Chromium as Cr+6 (10µg/mL in H2O)

Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Υ
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

#### **SECTION 16 OTHER INFORMATION**

#### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

#### Definitions and abbreviations

PC — TWA: Permissible Concentration-Time Weighted Average PC — STEL: Permissible Concentration-Short Term Exposure Limit IARC: International Agency for Research on Cancer ACGIH: American Conference of Governmental Industrial Hygienists STEL: Short Term Exposure Limit TEEL: Temporary Emergency Exposure Limit. IDLH: Immediately Dangerous to Life or Health Concentrations OSF: Odour Safety Factor NOAEL :No Observed Adverse Effect Level LOAEL: Lowest Observed Adverse Effect Level LOAEL: Lowest Observed Adverse Effect Level LOD: Limit Of Detection OTV: Odour Threshold Value BCF: BioConcentration Factors BEI: Biological Exposure Index

This document is copyright.

Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH. TEL (+61 3) 9572 4700.