

# SAFETY DATA SHEET

Revision: 2.0 Date: 21.05.2015

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),  
1272/2008 (CLP) & 453/2010

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

- 1.1 Product identifier**  
Product Name H Cement  
Chemical Name Mixture  
CAS No. Mixture  
EINECS No. Mixture  
REACH Registration No. None assigned.
- 1.2 Recommended use of the chemical and restrictions on use**  
Identified Use(s) PC14 Metal surface treatment products, including galvanic and electroplating products  
Uses Advised Against For professional users only.
- 1.3 Supplier's details**  
Company Identification VISHAY MEASUREMENTS GROUP UK LTD  
Stroudley Road  
Basingstoke  
Hampshire  
RG24 8FW  
United Kingdom  
Telephone +44 (0) 1256 462131  
Fax +44 (0) 1256 471441  
E-Mail (competent person) mm.uk@vishaypg.com
- 1.4 Emergency Phone No.** (00-1) 703-527-3887  
CHEMTREC

## 2. SECTION 2: HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture**
- 2.1.1 Regulation (EC) No. 1272/2008 (CLP)** Met. Corr. 1; H290  
Skin Irrit. 2; H315  
Skin Sens. 1; H317  
Eye Dam. 1; H318  
Acute Tox. 4; H332  
Resp. Sens. 1; H334  
STOT SE 3; H335  
Muta. 1B; H340  
Carc. 1A; H350  
Repr. 2; H361f  
STOT RE 1; H372  
Aquatic Chronic 2; H411
- 2.1.2 Directive 67/548/EEC & Directive 1999/45/EC** Xi; R37: Irritating to respiratory system.  
Xi; R38: Irritating to skin.  
Xi; R41: Risk of serious damage to eyes.  
R42/43: May cause sensitization by inhalation and skin contact.  
Carc. Cat 1; R45: May cause cancer.  
Muta. Cat 2; R46: May cause heritable genetic damage.  
Repr. Cat 3; R62: Possible risk of impaired fertility.  
T; R48/23: Toxic: danger of serious damage to health by prolonged exposure through inhalation.  
N; R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- 2.2 Label elements**  
Product Name According to Regulation (EC) No. 1272/2008 (CLP)  
H Cement

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Hazard Pictogram(s)



Signal Word(s)

Danger

Contains:

Silicon Dioxide, Phosphoric acid and Chromium (VI) trioxide

Hazard Statement(s)

H290: May be corrosive to metals.  
H315: Causes skin irritation.  
H317: May cause an allergic skin reaction.  
H318: Causes serious eye damage.  
H332: Harmful if inhaled.  
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H335: May cause respiratory irritation.  
H340: May cause genetic defects.  
H350: May cause cancer.  
H361f: Suspected of damaging fertility.  
H372: Causes damage to organs through prolonged or repeated exposure.  
H411: Toxic to aquatic life with long lasting effects.

Precautionary Statement(s)

P201: Obtain special instructions before use.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P304+P341: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P342 + P311: If experiencing respiratory symptoms: Call a POISON CENTER/doctor.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310: Immediately call a POISON CENTER/doctor.

Additional Information

None.

2.3 Other hazards

None.

## 3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixtures

EC Classification Regulation (EC) No. 1272/2008 (CLP)

Chemical identity of the substance	%W/W	CAS No.	EC No.	REACH Registration No.	Hazard Statement(s)
Silicon Dioxide	20 - 25	14808-60-7	238-878-4	None assigned	STOT RE 1; H372
Phosphoric Acid	< 20	7664-38-2	231-633-2	None assigned	Met. Corr. 1; H290 Skin Corr. 1B; H314 (SCL: $\geq$ 25%)
Aluminum Oxide	< 10	1344-28-1	215-691-6	None assigned	Not classified
Chromium (VI) Trioxide	< 5	1333-82-0	215-607-8	None assigned	Ox. Sol. 1; H271 Acute Tox. 3; H301 Acute Tox. 3; H311 Skin Corr. 1A; H314 Skin Sens. 1; H317 Acute Tox. 2; H330 Resp. Sens. 1; H334 STOT SE 3; H335 (SCL: $\geq$ 1%) Muta. 1B; H340 Carc. 1A; H350 Repr. 2; H361f

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					STOT RE 1; H372 Aquatic Acute 1; H400 Aquatic Chronic 1; H410
Aluminum Hydroxide	< 5	21645-51-2	244-492-7	None assigned	Not classified
Chromium Oxide	< 3	1308-38-9	215-160-9	None assigned	Not classified
Chromium (III) Hydroxide	< 1	1308-14-1	215-158-8	None assigned	Not classified

H271: May cause fire or explosion; strong oxidiser. H290: May be corrosive to metals. H301: Toxic if swallowed. H311: Toxic in contact with skin. H314: Causes severe skin burns and eye damage. H317: May cause an allergic skin reaction. H330: Fatal if inhaled. H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335: May cause respiratory irritation. H340: May cause genetic defects. H350: May cause cancer. H361f: Suspected of damaging fertility. H372: Causes damage to organs through prolonged or repeated exposure. H400: Very toxic to aquatic life. H410: Very toxic to aquatic life with long lasting effects. SCL: Specific Concentration Limit.

Directive 67/548/EEC & Directive 1999/45/EC

Chemical identity of the substance	%W/W	CAS No.	EC No.	REACH Registration No.	EC Classification and Risk Phrases
Silicon Dioxide	20 - 25	14808-60-7	238-878-4	None assigned	T; R48/23
Phosphoric Acid	< 20	7664-38-2	231-633-2	None assigned	C; R34
Aluminum Oxide	< 10	1344-28-1	215-691-6	None assigned	Not classified
Chromium (VI) Trioxide	< 5	1333-82-0	215-607-8	None assigned	O; R9 T; R25 T; R24 C; R35 R43 R42 Xi; R37 Muta. Cat. 2; R46 Carc. Cat. 1; R45 Repr. Cat. 3; R62 T; R48/23 N; R50/53
Aluminum Hydroxide	< 5	21645-51-2	244-492-7	None assigned	Not classified
Chromium Oxide	< 3	1308-38-9	215-160-9	None assigned	Not classified
Chromium (III) Hydroxide	< 1	1308-14-1	215-158-8	None assigned	Not classified

O; Oxidising Properties, T; Toxic, C; Corrosive, Irritant, N; Hazardous to the aquatic environment. R9: Explosive when mixed with combustible material. R24: Toxic in contact with skin. R25: Toxic if swallowed. R34: Causes burns. R35: Causes severe burns. R37: Irritating to respiratory system. R42: May cause sensitization by inhalation. R43: May cause sensitization by skin contact. R45: May cause cancer. R46: May cause heritable genetic damage. R48/23: Toxic: danger of serious damage to health by prolonged exposure through inhalation. R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R62: Possible risk of impaired fertility.

## 4. SECTION 4: FIRST AID MEASURES



### 4.1 Description of first aid measures

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. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. IF exposed or concerned: Get medical advice/attention. If unconscious, place in recovery position and get medical attention immediately. Apply artificial respiration if necessary. Do not employ mouth-to-mouth method.

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:

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Eye Contact	Get medical advice/attention. 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 with water (only if the person is conscious). 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.
<b>4.2 Most important symptoms and effects, both acute and delayed</b>	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause genetic defects. May cause cancer. Suspected of damaging fertility. Causes damage to organs through prolonged or repeated exposure.
<b>4.3 Indication of any immediate medical attention and special treatment needed</b>	Chemical eye burns may require extended irrigation. Ingestion: 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. Skin Contact: 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).

## 5. SECTION 5: FIREFIGHTING MEASURES

<b>5.1 Extinguishing media</b>	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.
<b>5.2 Special hazards arising from the substance or mixture</b>		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.
<b>5.3 Advice for fire-fighters</b>		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.

## 6. SECTION 6: ACCIDENTAL RELEASE MEASURES

<b>6.1 Personal precautions, protective equipment and emergency procedures</b>		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.
<b>6.2 Environmental precautions</b>		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.
<b>6.3 Methods and material for containment and cleaning up</b>		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 (2008/98/EEC).
<b>6.4 Reference to other sections</b>		See Section: 8, 13

## 7. SECTION 7: HANDLING AND STORAGE

<b>7.1 Precautions for safe handling</b>		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.
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## 7.2 Conditions for safe storage, including any incompatibilities

Storage temperature  
Storage life  
Incompatible materials

Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, sources of ignition and direct sunlight.

Ambient. 5 - 25°C

Stable under normal conditions.

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

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. May be corrosive to metals.

Keep only in original container.

## 7.3 Specific end use(s)

Suitable containers:

PC14 Metal surface treatment products, including galvanic and electroplating products. See Section: 1.2.

## 8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### 8.1.1 Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m <sup>3</sup> )	STEL (ppm)	STEL (mg/m <sup>3</sup> )	Note
Silicon Dioxide	14808-60-7	-	0.1 (1)	-	-	WEL
Phosphoric Acid	7664-38-2	-	1	-	2	WEL
Aluminium Oxide	1344-28-1	-	10 (2) 4 (3)	-	-	WEL

Note: WEL: Workplace Exposure Limit (UK HSE EH40)

(1): Respirable crystalline

(2): Inhalable aerosol

(3): Respirable aerosol

#### 8.1.2 Biological limit value

Not established.

#### 8.1.3 PNECs and DNELs

Not established.

### 8.2 Exposure controls

#### 8.2.1 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.

#### 8.2.2 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 (EN166).

Skin protection



Hand protection: Wear impervious gloves (EN374). 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: Chemical protection suit, boots and plastic gloves.

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

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Thermal hazards

## 8.2.3 Environmental Exposure Controls

appropriate.

Not applicable.

Avoid release to the environment.

## 9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 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°C (Mixture)
Flash point	Not applicable.
Evaporation rate	1 (BuAc = 1) (Mixture)
Flammability (solid, gas)	Not applicable - Liquid
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	23.7 mmHg @ 20°C
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.

### 9.2 Other information

None known.

## 10. SECTION 10: STABILITY AND REACTIVITY

10.1	<b>Stability and reactivity</b>	May be corrosive to metals.
10.2	<b>Chemical stability</b>	Stable under normal conditions.
10.3	<b>Possibility of hazardous reactions</b>	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.
10.4	<b>Conditions to avoid</b>	Keep away from water.
10.5	<b>Incompatible materials</b>	Keep away from: Combustible materials, Alkalis, Reducing agents, Strong oxidising agents, Acids and metals.
10.6	<b>Hazardous decomposition product(s)</b>	May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide, and possibly chromium. Thermal decomposition may yield phosphoric oxide.

## 11. SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects (Substances in preparations / mixtures)

#### Acute toxicity

Ingestion

Based upon the available data, the classification criteria are not met.  
Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.

Inhalation

Acute Tox. 4: Harmful if inhaled.

Skin Contact

Acute Toxicity Estimate Mixture Calculation: Estimated LC50 16.4 mg/l.

Based upon the available data, the classification criteria are not met.

Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg

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<b>Skin corrosion/irritation</b>	bw/day.
<b>Serious eye damage/irritation</b>	Skin Irrit. 2: Causes skin irritation.
<b>Respiratory or skin sensitization</b>	Eye Dam. 1: Causes serious eye damage.
	Skin Sens. 1: May cause an allergic skin reaction.
	Resp. Sens. 1: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>Germ cell mutagenicity</b>	Muta. 1B: May cause genetic defects.
<b>Carcinogenicity</b>	Carc. 1A: May cause cancer.
<b>Reproductive toxicity</b>	Repr. 2: Suspected of damaging fertility.
<b>STOT - single exposure</b>	STOT SE 3: May cause respiratory irritation.
<b>STOT - repeated exposure</b>	STOT RE 1: Causes damage to organs through prolonged or repeated exposure.
<b>Aspiration hazard</b>	Based upon the available data, the classification criteria are not met.
11.2 <b>Other information</b>	None.

## 12. SECTION 12: ECOLOGICAL INFORMATION

12.1 <b>Toxicity</b>	Aquatic Chronic 2: Toxic to aquatic life with long lasting effects. Estimated Mixture LC50 > 1 ≤ 10 mg/l (Fish)
12.2 <b>Persistence and degradability</b>	The methods for determining the biological degradability are not applicable to inorganic substances.
12.3 <b>Bioaccumulative potential</b>	No data for the mixture as a whole.
12.4 <b>Mobility in soil</b>	The product is predicted to have moderate mobility in soil.
12.5 <b>Results of PBT and vPvB assessment</b>	Not classified as PBT or vPvB.
12.6 <b>Other adverse effects</b>	None known.

## 13. SECTION 13: DISPOSAL CONSIDERATIONS

13.1 <b>Waste treatment methods</b>	Do not release undiluted and unneutralised to the sewer. This material and its container must be disposed of as hazardous waste (2008/98/EEC). Containers must be decontaminated in accordance with all applicable regulations.
13.2 <b>Additional Information</b>	Dispose of contents in accordance with local, state or national legislation.

## 14. SECTION 14: TRANSPORT INFORMATION

	<b>ADR/RID / IMDG / IATA</b>
14.1 <b>UN number</b>	UN 1760
14.2 <b>Proper Shipping Name</b>	CORROSIVE LIQUID N.O.S
14.3 <b>Transport hazard class(es)</b>	8
14.4 <b>Packing group</b>	III
14.5 <b>Environmental hazards</b>	Classified as a Marine Pollutant/ Environmentally hazardous substance
14.6 <b>Special precautions for user</b>	See Section: 2
14.7 <b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.
14.8 <b>Additional Information</b>	None.

## 15. SECTION 15: REGULATORY INFORMATION

15.1 <b>Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	
15.1.1 <b>EU regulations</b>	
Authorisations and/or Restrictions On Use	For professional users only. CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction). See also European Union Directive 2004/37/EC. Chromium (VI) trioxide (CAS# 1333-82-0).
SVHCs	
15.1.2 <b>National regulations</b>	
Germany	Water hazard class: 3
15.2 <b>Chemical Safety Assessment</b>	Not available.



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## 16. SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16.

**References:** Existing Safety Data Sheet (SDS), Harmonised Classification(s) for Phosphoric Acid (CAS# 7664-38-2) and Chromium (VI) trioxide (CAS# 1333-82-0), Existing ECHA registration(s) for Phosphoric Acid (CAS# 7664-38-2), Aluminum Oxide (CAS# 1344-28-1), Chromium (VI) trioxide (CAS# 1333-82-0), Aluminum Hydroxide (CAS# 21645-51-2) and Chromium Oxide (CAS# 1308-38-9), and the Classification and Labelling Inventory for Silicon Dioxide (CAS# 14808-60-7) and Chromium (III) Hydroxide (CAS# 1308-14-1).

Classification of the substance or mixture According to Regulation (EC) No. 1272/2008 (CLP)	Classification Procedure
Met. Corr. 1; H290	Estimated Physico-chemical properties of substance
Skin Irrit. 2; H315	Threshold Calculation
Skin Sens. 1; H317	Threshold Calculation
Eye Dam. 1; H318	Threshold Calculation
Acute Tox. 4; H332	Acute Toxicity Estimate Mixture Calculation
Resp. Sens. 1; H334	Threshold Calculation
STOT SE 3; H335	Threshold Calculation (SCL)
Muta. 1B; H340	Threshold Calculation
Carc. 1A; H350	Threshold Calculation
Repr. 2; H361f	Threshold Calculation
STOT RE 1; H372	Threshold Calculation
Aquatic Chronic 2; H411	Summation Calculation

### LEGEND

LTEL	Long Term Exposure Limit
STEL	Short Term Exposure Limit
DNEL	Derived No Effect Level
PNEC	Predicted No Effect Concentration
PBT	PBT: Persistent, Bioaccumulative and Toxic
vPvB	very Persistent and very Bioaccumulative

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

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### Annex to the extended Safety Data Sheet (eSDS)

No information available.



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