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

1.1 Product identifier

Product Name	M-Bond GA-100 Cement
Chemical Name	Mixture
CAS No.	Mixture
EINECS No.	Mixture
REACH Registration No.	None assigned.

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

Identified Use(s)	Adhesives.
Uses Advised Against	For professional users only.

1.3 Details of the supplier of the safety data sheet

Company Identification	VISHAY MEASUREMENTS GROUP UK LTD Stroudley Road Basingstoke Hampshire United Kingdom RG24 8FW
Telephone	+44 (0) 1256 462131
Fax	+44 (0) 1256 471441
E-Mail (competent person)	mm.uk@vishaypg.com

1.4 Emergency telephone number

(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)

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
STOT RE 1; H372
Aquatic Chronic 2; H411

2.2 Label elements

According to Regulation (EC) No. 1272/2008 (CLP)

Product Name: M-Bond GA-100 Cement

Hazard Pictogram(s):

Signal Word(s): Danger

Contains: Quartz (SiO2), Aluminium tris(dihydrogen phosphate)and Chromium (VI) trioxide.

Hazard Statement(s):

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.
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

3.1 Substances Not applicable

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)
Quartz (SiO2)	30 - 40	14808-60-7	238-878-4	None assigned	STOT RE 1; H372
Distilled Water	< 30	7732-18-5	231-791-2	**None assigned**	Not classified
Silicon Dioxide	15 - 20	7631-86-9	231-791-2	None assigned	Not classified
Aluminium tris(dihydrogen phosphate)	10 - 15	13530-50-2	236-875-2	None assigned	Eye Dam. 1; H318
Chromium (VI) Trioxide	< 3	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: ≥ 1%) Muta. 1B; H340 Carc. 1A; H350 Repr. 2; H361f STOT RE 1; H372 Aquatic Acute 1; H400 Aquatic Chronic 1; H410
Phosphoric Acid	< 1	7664-38-2	231-633-2 /616-646-7	None assigned	Met. Corr. 1; H290 Skin Corr. 1B; H314 (SCL: ≥ 25%)
Gum tragacanth	< 1	9000-65-1	232-552-5	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. 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.

4. SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Self-protection of the first aider	Wear suitable respiratory protective equipment if exposure to high levels of material are likely. Wear suitable protective clothing. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Avoid all contact.
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.
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. Drink two glasses of water. Do not induce vomiting. Do not give anything by mouth to an unconscious person. Obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

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. Causes damage to organs through prolonged or repeated exposure.

4.3 Indication of any immediate medical attention and special treatment needed

IF IN EYES: Get immediate medical advice/attention. Chemical eye burns may require extended irrigation.
IF INHALED: Do not employ mouth-to-mouth method.
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.

5. SECTION 5: FIREFIGHTING MEASURES

5.1 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.

5.2 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, silicon and possibly chromium. Sealed containers may rupture explosively if hot.

5.3 Advice 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.

6. SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Do not breathe vapour. Avoid all contact. Wear suitable respiratory protection. Use personal protective equipment as required. See Section: 8. 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.

6.2 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.

6.3 Methods and material for containment and cleaning up — Ensure full personal protection (including respiratory protection) during removal of spillages. 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).

6.4 Reference to other sections — See Section: 8, 13

7. SECTION 7: HANDLING AND STORAGE

7.1 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.

7.2 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. Do not allow product to dry out. Add water as necessary.

Storage temperature — Ambient. Store at temperatures not exceeding (°C): 27

Storage life — Stable under normal conditions.

Incompatible materials — Keep away from: Combustible materials, Reducing agent, Oxidizing agents, Acids and Alkalis.

7.3 Specific end use(s) — PC14 Metal surface treatment products, including galvanic and electroplating products.

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/m³)	STEL (ppm)	STEL (mg/m³)	Note
Quartz (SiO2)	14808-60-7	-	0.1 (1)	-	-	WEL
Silicon Dioxide	7631-86-9		6 (2) 2.4 (3)			WEL
Phosphoric Acid	7664-38-2	-	1	-	2	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. Guarantee that the eye flushing systems and safety showers are located close to the working place. 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 eye protection with side protection (EN166). Recommended: Full face shield.

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. Recommended: Neoprene.

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

Respiratory protection

Do not use in areas without adequate ventilation. In case of inadequate ventilation wear respiratory protection. Have available emergency self-contained breathing apparatus or full-face airline respirator when using this chemical.

Thermal hazards — Not applicable.

8.2.3 Environmental Exposure Controls — Avoid release to the environment.

9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Material separates into dark amber liquid and yellow paste.
Odour	Acidic Odour
Odour threshold	Not available.
pH	Not established.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	100°C
Flash point	Not applicable.
Evaporation rate	Slight
Flammability (solid, gas)	Not applicable - Liquid.
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	<1 (mmHg)
Vapour density	>1 (Air = 1)
Relative density	Not available.
Solubility(ies)	Slight (Water)
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 — Volatile Organic Compound Content: < 10 g/l

10. SECTION 10: STABILITY AND REACTIVITY

10.1 Stability and reactivity

10.2 Chemical stability — Stable under normal conditions.

10.3 Possibility of hazardous reactions — Hazardous polymerisation will not occur.

10.4 Conditions to avoid — Keep away from heat, sources of ignition and direct sunlight. Do not allow product to dry out. Add water as necessary.

10.5	**Incompatible materials**	Keep away from: Combustible materials, Reducing agent, Oxidizing agents, Acids and Alkalis.
10.6	**Hazardous decomposition product(s)**	May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide, silicon and possibly chromium.

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. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 17.2 mg/l.
Skin Contact	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
Skin corrosion/irritation	Skin Irrit. 2; Causes skin irritation.
Serious eye damage/irritation	Eye Dam. 1: Causes serious eye damage.
Respiratory or skin sensitization	Skin Sens. 1: May cause an allergic skin reaction. Resp. Sens. 1: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Germ cell mutagenicity	Muta. 1B: May cause genetic defects.
Carcinogenicity	Carc. 1A: May cause cancer.
Reproductive toxicity	Based upon the available data, the classification criteria are not met.
STOT - single exposure	STOT SE 3: May cause respiratory irritation.
STOT - repeated exposure	STOT RE 1: Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	Based upon the available data, the classification criteria are not met.

11.2	**Other information**	None.

12. SECTION 12: ECOLOGICAL INFORMATION

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

13. SECTION 13: DISPOSAL CONSIDERATIONS

13.1	**Waste treatment methods**	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	**Additional Information**	Dispose of contents in accordance with local, state or national legislation.

14. SECTION 14: TRANSPORT INFORMATION

		ADR/RID / IMDG / IATA
14.1	**UN number**	UN 3082
14.2	**UN proper shipping name**	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Chromium (VI) trioxide)
14.3	**Transport hazard class(es)**	9
14.4	**Packing group**	III
14.5	**Environmental hazards**	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 MARPOL 73/78 and the IBC Code**	Not applicable.
14.8	**Additional Information**	None.

15. SECTION 15: REGULATORY INFORMATION

15.1	**Safety, health and environmental regulations/legislation specific for the substance or mixture**	
15.1.1	**EU regulations**	
	Authorisations and/or Restrictions On Use	For professional users only. REACH: ANNEX XVII restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles. Chromium (VI) trioxide (CAS# 1333-82-0) Entry number: 28, 29 and 47.
	Substance(s) of Very High Concern (SVHCs)	Chromium (VI) trioxide (CAS# 1333-82-0) - CMR effects (carcinogenity, mutagenicity and toxicity for reproduction).
15.1.2	**National regulations**	
	Wassergefährdungsklasse (Germany)	Water hazard class: 3
15.2	**Chemical Safety Assessment**	Not available.

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 Silicon Dioxide (CAS# 7631-86-9), Aluminium tris(dihydrogen phosphate) (CAS# 13530-50-2) and Phosphoric Acid (CAS# 7664-38-2), and the Classification and Labelling Inventory for Quartz (CAS# 14808-60-7), Distilled water (CAS# 7732-18-5) and Gum tragacanth (CAS# 9000-65-1).

Classification of the substance or mixture According to Regulation (EC) No. 1272/2008 (CLP)	**Classification Procedure**
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
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.