SAFETY DATA SHEET

Version: 1.0
Date of Issue: 30 September 2016
Date of First Issue: 30 September 2016

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ACCORDING TO OSHA HCS (29 CFR 1910.1200)

SECTION 1: IDENTIFICATION

Product identifier used on the label	WC-16 Ceramic Cement	
Other means of identification	None	
Recommended use of the chemical and restrictions on use		
Recommended use	Bonding strain gages to a component	
Restrictions on use	Anything other than the above.	
Details of the supplier of the safety data sheet		
Supplier	VISHAY MEASUREMENTS GROUP, INC.	
Address of Supplier	Post Office Box 27777 Raleigh, NC 27611 USA	
Telephone	+1 919-365-3800	
Fax	+1 919-365-3945	
E-Mail (competent person)	mm.us@vishaypg.com	
Emergency telephone number	1-800-424-9300	1-800-424-9300

SECTION 2: HAZARD(S) IDENTIFICATION

Classification of the substance or mixture in accordance with paragraph (d) of 29 CFR 1910.1200

Physical hazards	Not classified
Health hazards	Eye Damage, Category 1
Environmental hazards	Not classified

Hazard Symbol

Signal Word(s)	DANGER
Hazard Statement(s)	Causes serious eye damage.
Precautionary Statement(s)	Wear protective gloves/protective clothing/eye protection/face protection. 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.
Other hazards	None known.
Percent of the mixture consists of ingredient(s) of unknown acute toxicity:	0%

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances Not applicable

Mixtures Substances in preparations / mixtures

Chemical identity of the substance	%W/W	CAS No.	EC No.	Hazard classification
Aluminum Oxide*	50	1344-28-1	215-691-6	Not classified
Mono Aluminum Phosphate	15	13530-50-2	236-875-2	Eye Damage, Category 1

*Substance with a national exposure limit

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Inhalation — If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

Skin Contact — After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of soap and water. If irritation (redness, rash, blistering) develops, get medical attention.

Eye Contact — 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.

Ingestion — Rinse mouth with water (do not swallow). Do NOT induce vomiting. If vomiting occurs turn patient on side. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

Most important symptoms and effects, both acute and delayed — Causes serious eye damage.

Indication of any immediate medical attention and special treatment needed — Treatment by an ophthalmologist due to possible caustic burn of the eyes may be required.

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 — Not flammable. May decompose in a fire giving off toxic fumes. Combustion products: Carbon monoxide, Carbon dioxide,

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 — Use personal protective equipment as required. Wear appropriate personal protective equipment, avoid direct contact. Contaminated clothing should be laundered before reuse. Ensure adequate ventilation. Avoid contact with eyes.

Methods and material for containment and cleaning up — Contain spillages with sand, earth or any suitable adsorbent material. Transfer to a container for disposal or recovery.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Ensure operatives are trained to minimise exposures. Ensure adequate ventilation. Wear appropriate personal protective equipment, avoid direct contact. Avoid contact with eyes. Keep good industrial hygiene. Wash hands thoroughly after handling. Contaminated clothing should be thoroughly cleaned. Do not eat, drink or smoke at the work place. Keep from direct sunlight.

Conditions for safe storage, including any incompatibilities

Keep only in original container. Store in a cool/low-temperature, well-ventilated (dry) place away from heat and ignition sources.

Storage temperature

Store at ambient temperature. Store at 40°-80℉

Incompatible materials

Avoid contact with acids and alkalis. Avoid contact with steel. Nitrates, Chlorates, calcium carbure, cyanide, Sulphur and sulphites.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m³)	STEL (ppm)	STEL (mg/m³)	Note
Aluminum Oxide	1344-28-1	- -	10 4	- -	- -	OSHA Total Dust Inhalable Dust
		-	10	-	-	ACGIH

Note: OSHA PELs 1910.1000 NIOSH RELs / ACGIH TLVs

The other components listed in Section 3 do not have occupational exposure limits.

Biological exposure indicies

Not established

Appropriate engineering controls

Ensure adequate ventilation. Store in a cool/low-temperature, well-ventilated (dry) place away from heat and ignition sources. Atmospheric levels should be controlled in compliance with the occupational exposure limit. A washing facility/water for eye and skin cleaning purposes should be present.

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

Keep good industrial hygiene. Wear appropriate personal protective equipment, avoid direct contact. Wash contaminated clothing before reuse. Do not eat, drink or smoke at the work place. Avoid contact with eyes.

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.

Suitable materials: Nitrile rubber (Minimum thickness: 0.4mm; breakthrough time >480 min), Polychloroprene - CR (Minimum thickness: 0.5mm; breakthrough time >480 min), Butyl rubber (Minimum thickness: 0.7mm; breakthrough time >480)

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

Respiratory protection 	In case of inadequate ventilation wear respiratory protection. Open system(s): Wear suitable respiratory protective equipment. A suitable dust mask or dust respirator with filter type P may be appropriate.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Clear Liquid with White Slurry
Odor	Odourless
Odor Threshold	Not established
pH	Not established
Melting Point/Freezing Point	Not established
Initial boiling point and boiling range	100℃
Flash Point	Not established
Evaporation Rate (Water = 1)	1
Flammability (solid, gas)	Not flammable
Upper/lower flammability or explosive limits	Not applicable
Vapour pressure	Not applicable
Vapour density	Not applicable
Relative density	Not established
Solubility(ies)	Partly soluble in water.
Partition coefficient: n-octanol/water	Not established
Auto-ignition temperature	Not established
Decomposition Temperature	Not established
Viscosity	Not established

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Stable under normal conditions. Hazardous polymerisation will not occur.
Conditions to avoid	Avoid contact with heat and ignition sources.
Incompatible materials	Avoid contact with acids and alkalis. Avoid contact with steel. Nitrates, Chlorates, calcium carbure, cyanide, Sulphur and sulphites.
Hazardous decomposition product(s)	Above 300°C, releases corrosive vapours. Combustion products: Carbon monoxide, Carbon dioxide,

SECTION 11: TOXICOLOGICAL INFORMATION

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	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 >20.0 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	Based upon the available data, the classification criteria are not met.
Serious eye damage/irritation	Eye Dam. 1; Causes serious eye damage.
Mono Aluminum Phosphate:	Test Result: Corrosive (OECD 437)
Respiratory or skin sensitization	Based upon the available data, the classification criteria are not met.
Germ cell mutagenicity	Based upon the available data, the classification criteria are not met.
Carcinogenicity	Based upon the available data, the classification criteria are not met.
Reproductive toxicity	Based upon the available data, the classification criteria are not met.

STOT - single exposure	Based upon the available data, the classification criteria are not met.
STOT - repeated exposure	Based upon the available data, the classification criteria are not met.
Aspiration hazard	Based upon the available data, the classification criteria are not met.

Information on likely routes of exposure

Inhalation	Unlikely – accidental exposure
Ingestion	Unlikely – accidental exposure
Skin Contact	Possible – accidental exposure
Eye Contact	Unlikely – accidental exposure

Early onset symptoms related to exposure	Causes damage to the eyes.
Delayed health effects from exposure	None known

Other information

NTP Report on Carcinogens	No
IARC Monographs	No
OSHA Designated Carcinogen	No

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity	Based upon the available data, the classification criteria are not met. Estimated Mixture LC50 >100 mg/l (Fish)
Persistence and degradability	No data for the mixture as a whole.
Bioaccumulative potential	No data for the mixture as a whole.
Mobility in soil	The substance is predicted to have low mobility in soil. Partly soluble in water.
Other adverse effects	None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods	Dispose of this material and its container as hazardous wasteSend after pre-treatment to a appropriate hazardous waste incinerator facility according to legislation. Dispose of contents in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

(Not classified according to the United Nations 'Recommendations on the Transport of Dangerous Goods')

	ADR/RID	IMDG	IATA/ICAO
UN number	Not classified	Not classified	Not classified
UN proper shipping name	Not classified	Not classified	Not classified
Transport hazard class(es)	Not classified	Not classified	Not classified
Packing group	Not classified	Not classified	Not classified
Environmental hazards	Not classified	Not classified	Not classified
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable		
Special precautions for user	See Section: 2		

SECTION 15: REGULATORY INFORMATION

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

US Federal Regulations

TSCA (Toxic Substance Control Act)	Not Listed

US State Regulations

Proposition 65 (California)	Not Listed

SECTION 16: OTHER INFORMATION

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

Version	1.0
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References:
Existing Safety Data Sheet (SDS)**,** Existing EU ECHA registration(s) for Aluminum Oxide (CAS No. 1344-28-1) and Mono Aluminum Phosphate (CAS No. 13530-50-2)

GHS Classification of the substance or mixture	Classification Procedure
Eye Damage, Category 1	Threshold Calculation

LEGEND

ACGIH: American Conference of Governmental Industrial Hygienists
IARC: International Agency for Research on Cancer
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: The Occupational Safety & Health Administration
PBT: Persistent, Bioaccumulative and Toxic
PEL: Permissible exposure limit
REL: Recommended exposure limit
STEL: Short Term Exposure Limit
TLV: Threshold Limit value
TWA: Time Weighted Average
TSCA: Toxic Substance Control Act
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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