

SAFETY DATA SHEET

Version: 01
Date of Issue: 29 September 2016
Date of First Issue: 29 September 2016

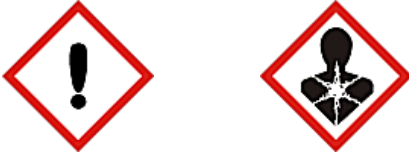
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ACCORDING TO OSHA HCS (29 CFR 1910.1200)

SECTION 1: IDENTIFICATION

Product identifier used on the label	NCC-3 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	Carcinogen, category 1A Specific target organ toxicity — repeated exposure, Category 1 Specific target organ toxicity — single exposure, Category 3	
Environmental hazards	Not Classified	
Hazard Symbol		
Signal Word(s)	DANGER	
Hazard Statement(s)	May cause cancer. Causes damage to organs through prolonged or repeated exposure. May cause respiratory irritation. Harmful to aquatic life with long lasting effects.	
Precautionary Statement(s)	Obtain special instructions before use. Avoid breathing mist/vapours/spray. Wear protective gloves/protective clothing/eye protection/face protection. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Get medical advice/attention. Store in a well-ventilated place. Keep container tightly closed.	
Other hazards	None known.	
Percent of the mixture consists of ingredient(s) of unknown acute toxicity:	0%	

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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
Quartz (Silica, respirable Crystalline)	42	14808-60-7	238-878-4	Carcinogen, category 1A Specific target organ toxicity — repeated exposure, Category 1 Specific target organ toxicity — single exposure, Category 3

SECTION 4: FIRST AID MEASURES



Description of first aid measures

Inhalation

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Apply artificial respiration if breathing has ceased or shows signs of failing. Get medical advice/attention if you feel unwell.

Skin Contact

IF ON SKIN (or hair): 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

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation develops and persists, get medical attention.

Ingestion

Rinse mouth with water (do not swallow). Do NOT induce vomiting. If vomiting occurs turn patient on side. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. IF exposed or concerned: Call a POISON CENTER/doctor.

Most important symptoms and effects, both acute and delayed

May cause cancer. May cause respiratory irritation. Causes damage to organs through prolonged or repeated exposure.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Notes to a physician:

IF INHALED: Breathing difficulties may appear with several hours delay.

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 breathing vapours. Avoid breathing dust. Avoid all contact. Remove all ignition sources.

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Large spillages: Evacuate the area and keep personnel upwind.
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.
Large spillages: Evacuate the area and keep personnel upwind. Notify police and fire brigade as soon as possible.

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 breathing vapours. Avoid breathing dust. Avoid all contact. In case of insufficient ventilation, wear suitable respiratory equipment. Keep away from: Elevated temperature. 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. 4 – 26 °C
Incompatible materials Strong oxidising agents, Acids and Bases

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m ³)	STEL (ppm)	STEL (mg/m ³)	Note
Silica, respirable crystalline	14808-60-7	-	0.05	-	-	NIOSH
		-	30	-	-	OSHA Total Dust
		-	10	-	-	Respirable Dust
		-	0.05	-	-	ACGIH, A2

Note: OSHA PELs 1910.1000 TABLE Z-1/ NIOSH RELs / ACGIH TLVs, 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.

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.

Individual protection measures, such as personal protective equipment (PPE) Keep good industrial hygiene. Wear appropriate personal protective equipment, avoid direct contact. Avoid breathing dust. Avoid breathing vapours. Avoid all contact. IF exposed: Wash immediately with water. Wash contaminated clothing before reuse. 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

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information provided by the gloves' producer.

Suitable materials:

Butyl rubber, Fluorinated rubber - FKM

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°C
Flash Point	Not established.
Evaporation rate (Water = 1)	1
Flammability (solid, gas)	Not established.
Upper/lower flammability or explosive limits	Not established.
Vapour pressure	Not established.
Vapour density	Not established.
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	Heat, Keep away from oxidisers, heat, flames or ignition sources.
Incompatible materials	Strong oxidising agents, Acids and Bases
Hazardous decomposition product(s)	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.
Acute toxicity - Inhalation	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 >20.0 mg/l.
Acute toxicity - 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	Based upon the available data, the classification criteria are not met.

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Skin sensitization	Based upon the available data, the classification criteria are not met.
Respiratory 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	Carc. 1A; May cause cancer.
Quartz (Silica, respirable Crystalline):	IARC Classification: Group 1. NTP Report on Carcinogens Suspected of causing cancer by inhalation. (Checkoway et al., 1993)(Rice et al., 2001)(Rafnsson V et al, 1997) Route of Exposure: Inhalation into Lungs Causes irritation. Inflammation. Leading to Silicosis and eventually tumour formation. (SIAM 32, 19-21 April 2011)
Reproductive toxicity	Based upon the available data, the classification criteria are not met.
STOT - single exposure	STOT SE 3; May cause respiratory irritation.
Quartz (Silica, respirable Crystalline):	Irritating to respiratory system. (IARC (1997) and SITTIG (4 th , 2002))
STOT - repeated exposure	STOT RE 1; Causes damage to organs through prolonged or repeated exposure. Inhalation into Lungs
Quartz (Silica, respirable Crystalline):	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)
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	None known.
Delayed health effects from exposure	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.
Other information	
NTP Report on Carcinogens	
Quartz (Silica, respirable Crystalline):	Yes (Silica, Crystalline (Respirable Size) - Known to be a human carcinogen)
IARC Monographs	
Quartz (Silica, respirable Crystalline):	IARC Classification: Group 1.
OSHA Designated Carcinogen	
Quartz (Silica, respirable Crystalline):	Not listed

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.

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SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Dispose of this material and its container as hazardous waste. Send after pre-treatment to an appropriate hazardous waste incinerator facility according to 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	See Section: 2		
Special precautions for user	Not applicable		

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
Revision Date 28 September 2016
Date of First Issue 28 September 2016

References:

The EU Classification and Labelling Inventory for Quartz (CAS No. 14808-60-7).

Literature References:

1. Checkoway, H., Heyer, N.J., Demers, P.A. & Breslow, N.E. (1993) Mortality among workers in the diatomaceous earth industry. Br. J. Ind. Med., 50, 586-597
2. Rice, F.L., Park, R., Stayner, L., Smith, R., Gilbert, S., and Checkoway, H. 2001. Crystalline silica exposure and lung cancer mortality in diatomaceous earth industry workers: a quantitative risk assessment. Occup Environ Med, 58(1):38-45.
3. Rafnsson V & Gunnarsdottir H, 1997, Lung cancer incidence among an Icelandic cohort exposed to diatomaceous earth and cristobalite., Scand J Work Environ Health, 23: 187 – 192. PMID:9243728.
4. INITIAL TARGETED ASSESSMENT PROFILE (Human Health), SIAM 32, 19-21 April 2011, OECD
5. Silica, Some Silicates, Coal Dust and para-Aramid Fibrils, IARC MONOGRAPHS ON THE EVALUATION OF CARCINOGENIC RISKS TO HUMANS, Volume 68 (1997)
6. 13th Report on Carcinogens, National Toxicology Program, 2014
7. Ziskind M, Jones RN, Weill H, 1976, Silicosis. American review of respiratory disease, 113:643-665.
8. Richard P Pohanish; Marshall Sittig, 2002, Sittig's handbook of toxic and hazardous chemicals and carcinogens, Norwich, N.Y., U.S.A. : Noyes Publications, ©2002.

GHS Classification of the substance or mixture	Classification Procedure
Carcinogen, category 1A	Threshold Calculation
Specific target organ toxicity — repeated exposure,	Threshold Calculation

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Category 1	
Specific target organ toxicity — single exposure, Category 3	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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