SAFETY DATA SHEET

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ACCORDING TO OSHA HCS (29 CFR 1910.1200)

SECTION 1: IDENTIFICATION

Product identifier used on the label M-Bond GA-61 Part B

Other means of identification Not applicable

Recommended use of the chemical and restrictions on use

Recommended use: Adhesives.
Restrictions on use: None.

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
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E-Mail (competent person): mm.us@vishaypg.com

Emergency telephone number 1-800-424-9300 CHEMTREC (24 hours)

SECTION 2: HAZARD(S) IDENTIFICATION

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

Physical hazards: Combustible Dust
Health hazards: Eye Damage, Category 1
Skin Sensitisation, Category 1
Respiratory sensitization, Category 1
Carcinogen, Category 1A
Specific target organ toxicity — repeated exposure, Category 1
Environmental hazards: Not classified

Hazard Symbol

Signal Word(s): DANGER

Hazard Statement(s):
May form combustible dust concentrations in air.
Causes serious eye damage.
May cause an allergic skin reaction.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause cancer.
Causes damage to organs through prolonged or repeated exposure.

Precautionary Statement(s):
Keep away from all ignition sources including heat, sparks and flame
Keep container closed and grounded
Prevent dust accumulations to minimize explosion hazard
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust.

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.
IF ON SKIN: Wash with plenty of water.
If skin irritation or rash occurs: Get medical advice/attention.
IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
IF exposed or concerned: 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
1,2,4,5-Benzenetetracarboxylic Dianhydride	<100	89-32-7	201-898-9	Eye Damage, Category 1 Respiratory sensitization, Category 1 Skin Sensitisation, Category 1
Talc	10 – 30	14807-96-6	238-877-9	Not classified
1,2,4,5-Benzenetetracarboxylic Acid	1 – 5	89-05-4	201-879-5	Not classified
Quartz (crystalline silica)	0.5 – 1	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

Self-protection of the first aider: Do not breathe dust. Wear suitable protective clothing. Wear suitable respiratory protective equipment if exposure to high levels of material are likely. Avoid all contact.

Inhalation: IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Skin Contact: IF ON SKIN (or hair): Rinse skin immediately with plenty of water for 15-20 minutes. Take off contaminated clothing and wash before reuse. 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. Hold eye open and rinse slowly and gently with water for 15-20 minutes. If eye irritation persists: Get medical advice/attention.

Ingestion: If swallowed, rinse mouth with water (only if the person is conscious). Drink two

	glasses of water. Do not induce vomiting. Call a POISON CENTER or doctor/physician.
Most important symptoms and effects, both acute and delayed	Causes serious eye damage. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause cancer. 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 IN EYES: Chemical eye burns may require extended irrigation. Due to possible delayed effect of poisoning and for safety reasons, they should be kept under medical observation for at least 48 hours.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media	
Suitable Extinguishing Media	Extinguish with carbon dioxide, dry chemical, foam or waterspray.
Unsuitable extinguishing Media	Do not use water jet. Direct water jet may spread the fire. Avoid dust generation. Finely dispersed particles form explosive mixtures with air.
Special hazards arising from the substance or mixture	Explosion: May form combustible dust concentrations in air. Avoid dust generation. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Decomposes in a fire giving off toxic fumes: Carbon monoxide, Carbon dioxide.
Special protective equipment and precautions for fire fighters	Fight fire with normal precautions from a reasonable distance. Use low-pressure medium fog streams to avoid dust clouds. Apply agent gently to avoid dust clouds. Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Avoid all contact. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Ensure adequate ventilation. Eliminate all ignition sources if safe to do so. Avoid breathing dust. Avoid contact with skin, eyes or clothing. In case of inadequate ventilation wear respiratory protection. Use personal protective equipment as required. See Section: 8. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.
Environmental precautions	Do not allow to enter drains, sewers or watercourses.
Methods and material for containment and cleaning up	Stop leak if safe to do so. Ensure suitable personal protection during removal of spillages. Sweep spilled substances into containers if appropriate moisten first to prevent dusting. Recommended: Vacuum spilled material. Avoid dispersal of dust in the air (i.e do not use compressed air for cleaning purposes). Collect mechanically and dispose of according to Section 13. Use only non-sparking tools. Ventilate the area and wash spill site after material pick-up is complete. Avoid release to the environment.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling	Ensure adequate ventilation. Avoid all contact. Do not breathe dust. Use personal protective equipment as required. See Section: 8. Avoid dust generation. Keep away from fire, sparks and heated surfaces - no smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Do not allow dust to accumulate on surfaces and equipment. Use non-dispersive workplace cleaning (no compressed air / high pressure cleaners). Do not use in confined spaces. Wash hands thoroughly after handling. Contaminated clothing should be thoroughly cleaned. Protect from moisture.
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.
Storage temperature	Ideal storage temperature is (℃): <50℃
Storage life	Stable under normal conditions.

	Protect from moisture.
Incompatible materials	Keep away from: Flammable liquid, Reducing agent, Oxidizing agents, Corrosive Substances, Alkalis

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
Particulates not otherwise regulated / Inert or nuisance dust	-	- -	15 5	- -	- -	OSHA Total dust Respirable dust
Talc (containing no asbestos and less than 1% quartz)	14807-96-6	-	2	-	-	NIOSH Respirable Dust
		20 mppcf	-	-	-	OSHA
		-	2	-	-	ACGIH, A4
Quartz (SiO2) (crystalline silica)	14808-60-7	-	0.05	-	-	NIOSH
		- -	30 10	- -	- -	OSHA Total Dust Respirable Dust
		-	0.025	-	-	ACGIH, A2

Note: OSHA PELs 1910.1000 TABLE Z-1/3/ 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.
A4: Not Classifiable as a Human Carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of the lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.
[a]Mppcf: Millions of particles per cubic foot of air

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

Biological Exposure Indices	Not established
Appropriate engineering controls	Ensure adequate ventilation. Atmospheric levels should be controlled in compliance with the occupational exposure limit. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.
Individual protection measures, such as personal protective equipment (PPE)	General hygiene measures for the handling of chemicals are applicable. Avoid contact with skin, eyes or clothing. Avoid breathing dust. 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. Have available eyewash bottle with clean water. Do not use in confined spaces.
Eye/face protection	Use eye protection designed to protect against dusts.

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.

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

Respiratory protection

Wear suitable respiratory protective equipment if processing involves working in areas where dusts or vapours are likely to be evolved. Use NIOSH approved respiratory protection. (Recommended: Respiratory protection necessary at/for: > 10 mg/m³ Dust).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	White / Pale brown Powder
Odor	Odourless
Odor Threshold	Not available.
pH	Not established.
Melting Point/Freezing Point	Not established.
Initial boiling point and boiling range	>400℃ (Mixture)
Flash Point	>93℃ (Mixture)
Evaporation rate (Butyl acetate = 1)	Not established.
Flammability (solid, gas)	Not established.
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	Not established.
Vapour density	Not established.
Relative density	1.81 g/cm^3 (H2O = 1) (Mixture)
Solubility(ies)	Slightly soluble in: Water
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerisation will not occur. May form combustible dust clouds in air. Contact with water or moist air causes production of opaque and corrosive fumes.
Conditions to avoid	Do not store and transport with oxidizers, (acids) (and bases), etc. Keep away from fire, sparks and heated surfaces. Take precautionary measures against static discharge. Do not allow dust to accumulate on surfaces and equipment. Do not use in confined spaces. Protect from moisture.
Incompatible materials	Flammable liquid, Reducing agent, Oxidizing agents, Corrosive Substances, Alkalis and Acids.
Hazardous decomposition product(s)	May decompose in a fire giving off toxic fumes. 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	Eye Damage, Category 1; Causes serious eye damage.
Skin sensitization	Skin Sensitisation, Category 1: May cause an allergic skin reaction.
Respiratory sensitization	Respiratory sensitization, Category 1: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Germ cell mutagenicity	Based upon the available data, the classification criteria are not met.
Carcinogenicity	Carcinogen, Category 1A; May cause cancer
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	Specific target organ toxicity — repeated exposure, Category 1; Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	Based upon the available data, the classification criteria are not met.

Information on likely routes of exposure

Inhalation	Possible – accidental exposure; when dust is dispersed.
Ingestion	Unlikely – accidental exposure
Skin Contact	Possible – accidental exposure
Eye Contact	Unlikely – accidental exposure

Early onset symptoms related to exposure	Causes serious eye damage. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Delayed health effects from exposure	Symptoms may be delayed for as long as 48 hours following exposure. May cause cancer. Causes damage to organs through prolonged or repeated exposure.

Other information

NTP Report on Carcinogens	Quartz (SiO2) (crystalline silica): Group K: Known To Be Human Carcinogens
IARC Monographs	Talc: Group 3 - Not classifiable as to its carcinogenicity to humans. Quartz (SiO2) (crystalline silica): Group 1 - Carcinogenic to humans
OSHA Designated Carcinogen	All chemicals are 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	Readily biodegradable.
Bioaccumulative potential	The product has low potential for bioaccumulation.
Mobility in soil	The product is predicted to have high mobility in soil. (Water Soluble)
Other adverse effects	None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods	This material and its container must be disposed of as hazardous waste. Send after pre-treatment to a appropriate hazardous waste incinerator facility according to legislation.

Additional Information	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
UN number	Not applicable.	Not applicable.	Not applicable.
UN proper shipping name	Not applicable.	Not applicable.	Not applicable.
Transport hazard class(es)	Not applicable.	Not applicable.	Not applicable.
Packing group	Not applicable.	Not applicable.	Not applicable.
Environmental hazards	Not classified	Not classified as a Marine Pollutant.	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)	1,2,4,5-Benzenetetracarboxylic Dianhydride - Subject to 25,000 lb reporting threshold Talc - Subject to 25,000 lb reporting threshold 1,2,4,5-Benzenetetracarboxylic Acid - Subject to 25,000 lb reporting threshold Quartz (SiO2) (crystalline silica) - Subject to 25,000 lb reporting threshold
EPCRA/SARA Section 302 Extremely Hazardous Substances	All chemicals are not listed
EPCRA Section 313 Toxics Release Inventory (TRI) Program	All chemicals are not listed
NIOSH Occupational Carcinogen List	Quartz (SiO2) (crystalline silica)
OSHA List of highly hazardous chemicals, toxics and reactives	All chemicals are not listed
NTP Report on Carcinogens (RoC) List	Quartz (SiO2) (crystalline silica): Group K: Known To Be Human Carcinogens
Poison Prevention Packaging Act	All chemicals are not listed

US State Regulations

California State, Proposition 65 List	All chemicals are not listed
California State, Safer Consumer Products Regulations	1,2,4,5-Benzenetetracarboxylic Dianhydride - Candidate Chemicals List Talc - Candidate Chemicals List Quartz (SiO2) (crystalline silica): Candidate Chemicals List
Maine State, Toxic Chemicals in Children's Products Act	Quartz (SiO2) (crystalline silica): COC list. CHC list
New Jersey State Worker and Community RTK Act	Talc - RTKHSL. SHHSL Quartz (SiO2) (crystalline silica): RTKHSL. SHHSL
Pennsylvania State, Worker and Community RTK Act	Talc - Hazardous Substance List Quartz (SiO2) (crystalline silica): Hazardous Substance List
Rhode Island State, Hazardous Substances RTK Act	Talc - Hazardous Substance List Quartz (SiO2) (crystalline silica): Hazardous Substance List

Non-Regional

IARC Monographs, List of Classifications	Talc - Group 3: Not classifiable as to its carcinogenicity to humans. Quartz (SiO2) (crystalline silica): Group 1

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Updated substance / mixture classification. New SDS Regulation compliant with HazCom 2012 format, all sections have been updated to include new information. Please review SDS with care.

Version	2.0
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References:
Existing Safety Data Sheet (SDS), EU Data: Existing ECHA registration(s) for benzene-1,2,4,5-tetracarboxylic acid (CAS# 89-05-4) and Bisphenol A (CAS# 80-05-7) and Harmonised Classification benzene-1,2:4,5-tetracarboxylic dianhydride (CAS# 89-32-7).

GHS Classification of the substance or mixture	Classification Procedure
Eye Damage, Category 1	Threshold Calculation
Respiratory sensitization, Category 1	Threshold Calculation
Skin Sensitisation, Category 1	Threshold Calculation
Carcinogen, Category 1A	Threshold Calculation
Specific target organ toxicity — repeated exposure, Category 1	Threshold Calculation

LEGEND

ACGIH: American Conference of Governmental Industrial Hygienists
BEI: Biological Exposure Indices (ACGIH)
IARC: International Agency for Research on Cancer
Irr: Irritation
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
SCL: Specific Concentration Limit
Skin": Risk of overexposure via dermal contact
STEL: Short Term Exposure Limit
TLV: Threshold Limit value
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
URT: Upper respiratory tract
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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