SAFETY DATA SHEET

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ACCORDING TO OSHA HCS (29 CFR 1910.1200)

SECTION 1: IDENTIFICATION

Product identifier used on the label EPY-500 Part B

Other means of identification

Chemical Name	Mixture
CAS No.	Mixture
EINECS No.	Mixture

Recommended use of the chemical and restrictions on use

Recommended use	Metal surface treatment products, including galvanic and electroplating products.
Restrictions on use	None known.

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 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	Skin Sensitisation, Category 1 Eye damage, Category 1 Respiratory sensitization, Category 1
Environmental hazards	Not classified

Hazard Symbol

Signal Word(s) Danger

Hazard Statement(s)

May form combustible dust concentrations in air.
May cause an allergic skin reaction.
Causes serious eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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

Wash hands and exposed skin thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
[In case of inadequate ventilation] wear respiratory protection.
Avoid breathing dust.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
IF ON SKIN: Wash with plenty of water.
If skin irritation occurs, 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.
Immediately call a POISON CENTER/doctor.
Wash contaminated clothing before reuse.
Dispose of contents in accordance with local, state or national legislation.

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
Benzene-1,2:4,5-tetracarboxylic dianhydride	< 81	89-32-7	201-898-9	Skin Sensitisation, Category 1 Eye damage, Category 1 Respiratory sensitization, Category 1
Magnesium silicate talc	< 18	14807-96-6	238-877-9	Not classified
1,2,4,5-Benzenetetracarboxylic Acid	< 2	89-05-4	201-879-5	Not classified

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Self-protection of the first aider: Avoid breathing dust. Wear suitable protective clothing. Wear suitable respiratory protective equipment if exposure to high levels of material are likely.

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/doctor. If breathing is laboured, oxygen should be administered by qualified personnel. If breathing has stopped, apply artificial respiration.

Skin Contact: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Contaminated clothing should be thoroughly cleaned. If irritation develops and persists, 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. Obtain prompt consultation, preferably from an ophthalmologist. Continue irrigation until medical attention can be obtained.

Ingestion: If swallowed, rinse mouth with water (only if the person is conscious). Drink two glasses of water. Do not give milk or alcoholic beverages. Do not induce vomiting. Obtain medical attention if ill effects occur.

Most important symptoms and effects, both acute and delayed May cause an allergic skin reaction. Causes serious eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Indication of any immediate medical attention and special treatment needed Treat symptomatically.
IF IN EYES: Chemical eye burns may require extended irrigation.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media	As appropriate for surrounding fire. 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.
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 contact with skin, eyes or clothing. Avoid breathing 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	Ground/bond container and receiving equipment. Keep in a cool, dry, well ventilated place. Keep away from fire, sparks and heated surfaces. Keep only in original container. Protect from moisture.
Storage temperature	Ambient
Incompatible materials	Keep away from: Flammable Liquids, Acids, Alkalis and Strong oxidising agents. Contact with water or moist air causes production of opaque and corrosive fumes.

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
Talc (containing no asbestos and less than 1% quartz)	14807-96-6	-	2	-	-	NIOSH Respirable Dust
		20 mppcf	-	-	-	OSHA
		-	2	-	-	ACGIH, A4
Particulates not otherwise regulated / Inert or nuisance dust	-	-	15	-	-	OSHA Total dust
		-	5	-	-	Respirable dust

Note: OSHA PELs 1910.1000 TABLE Z-3/ NIOSH RELs / ACGIH TLVs
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 or use appropriate containment. 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	Powder
Odor	Not available.
Odor Threshold	Not available.
pH	Not available.
Melting Point/Freezing Point	Not available.
Initial boiling point and boiling range	Not available.
Flash Point	>93.3℃
Evaporation rate (Butyl acetate = 1)	Not applicable.
Flammability (solid, gas)	Non-flammable.
Upper/lower flammability or explosive limits	Not applicable.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	1.81 (H_2O = 1)
Solubility(ies)	Not available.
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	May form combustible dust clouds in air. Contact with water or moist air causes production of opaque and corrosive fumes.
Conditions to avoid	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	Keep away from: Flammable Liquids, Acids, Alkalis and Strong oxidising agents.
Hazardous decomposition product(s)	May decompose in a fire giving off toxic fumes. Oxides of carbon.

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 (Dusts) > 5 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	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	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 — None known.

Other information

NTP Report on Carcinogens	None of the components are listed.
IARC Monographs	Magnesium silicate talc: Group 3 - Not classifiable as to its carcinogenicity to humans.
OSHA Designated Carcinogen	None of the components are listed.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic Chronic 2: Toxic to aquatic life with long lasting effects. Estimated Mixture LC50 >1 ≤ 10 mg/l (Fish)
Persistence and degradability	Part of the components are poorly biodegradable.
Bioaccumulative potential	The product has low potential for bioaccumulation.
Mobility in soil	The product is predicted to have low mobility in soil.
Other adverse effects	None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods — Containers of this material may be hazardous when empty since they retain product residue. This material and its container must be disposed of as hazardous waste. Dispose of wastes in an approved waste disposal facility. 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.
UN proper shipping name	Not applicable.
Transport hazard class(es)	Not classified as dangerous for transport.
Packing group	Not applicable.
Environmental hazards	Not classified as a Marine Pollutant./ Environmentally hazardous substance.
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)	Benzene-1,2:4,5-tetracarboxylic dianhydride - Subject to 25,000 lb reporting threshold Magnesium silicate talc - Subject to 25,000 lb reporting threshold 1,2,4,5-Benzenetetracarboxylic Acid - Subject to 25,000 lb reporting threshold
EPCRA/SARA Section 302 Extremely Hazardous Substances	Not listed.
EPCRA Section 313 Toxics Release Inventory (TRI) Program	Not listed.

NIOSH Occupational Carcinogen List	Not listed.
OSHA List of highly hazardous chemicals, toxics and reactives	Not listed.
NTP Report on Carcinogens (RoC) List	Not listed.
Poison Prevention Packaging Act	Not listed.
US State Regulations	
California State, Proposition 65 List	Not listed.
California State, Safer Consumer Products Regulations	Benzene-1,2:4,5-tetracarboxylic dianhydride - Candidate Chemicals List Magnesium silicate talc - Candidate Chemicals List
Maine State, Toxic Chemicals in Children's Products Act	Not listed.
New Jersey State Worker and Community RTK Act	Magnesium silicate talc - RTKHSL. SHHSL
Pennsylvania State, Worker and Community RTK Act	Magnesium silicate talc - Hazardous Substance List
Rhode Island State, Hazardous Substances RTK Act	Magnesium silicate talc - Hazardous Substance List
Non-Regional	
IARC Monographs, List of Classifications	Magnesium silicate talc - Group 3: Not classifiable as to its carcinogenicity to humans.

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.

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Refer to: NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids, for safe handling.
OSHA Combustible Dust National Emphasis Program Instruction, OSHA Directive CPL 03-00-008, 2008.
OSHA Safety and Health Information Bulletin (SHIB) (07-31-2005) *Combustible Dust in Industry: Preventing and Mitigating the Effects of Fire and Explosions*.

References:
Existing Safety Data Sheet (SDS)
EU Data: Harmonised Classification for 1,2,4,5-Benzenetetracarboxylic Dianhydride (CAS# 89-32-7). The Classification and Labelling Inventory for and Magnesium silicate talc (CAS# 14807-96-6) and 1,2,4,5-Benzenetetracarboxylic Acid (CAS# 89-05-4).

GHS Classification of the substance or mixture	Classification Procedure
Skin Sensitisation, Category 1	Threshold Calculation
Eye damage, Category 1	Threshold Calculation
Respiratory sensitization, 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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