

SAFETY DATA SHEET

Version: 2.0
Date of Issue: 03 May 2017
Date of First Issue: 13 August 2014


www.vishaypg.com

ACCORDING TO OSHA HCS (29 CFR 1910.1200)

SECTION 1: IDENTIFICATION

Product identifier used on the label	Barrier E
Other means of identification	Not applicable
Recommended use of the chemical and restrictions on use	
Recommended use	Strain gauge installation
Restrictions on use	For professional users only.
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	Not classified
Health hazards	Carcinogen, Category 2
Environmental hazards	Not classified
Hazard Symbol	
Signal Word(s)	Warning
Hazard Statement(s)	Suspected of causing cancer.
Precautionary Statement(s)	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. IF exposed or concerned: Get medical advice/attention. Store locked up. Dispose of contents in accordance with local, state or national legislation.
Other hazards	Contains: 40% of the mixture consists of components of unknown hazards to the aquatic environment:
Percent of the mixture consists of ingredient(s) of unknown acute toxicity:	40 percent of the mixture consists of ingredient(s) of unknown toxicity.

SAFETY DATA SHEET

Version: 2.0
Date of Issue: 03 May 2017
Date of First Issue: 13 August 2014

www.vishaypg.com

ACCORDING TO OSHA HCS (29 CFR 1910.1200)

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
Mixed rubber blend	25 - 35	-	-	Not known.
Kaolin	15 - 25	1332-58-7	310-194-1	Not classified
Limestone (calcium carbonate)	15 - 25	1317-65-3	215-279-6	Not classified
Asphalt	5 - 10	64742-93-4	265-196-4	Not classified
Distillates (Petroleum), C3-6, Piperylene-Rich, Polymers With Isobutylene	< 10	152698-66-3	-	Not classified
Poly Vinyl Chloride	≤ 5	9002-86-2	-	Not classified
Polyester	< 5	-	-	Not known.
Carbon Black	< 5	1333-86-4	215-609-9	Not classified
Antimony Trioxide	< 1	1309-64-4	215-175-0	Carcinogen, Category 2

SECTION 4: FIRST AID MEASURES



Description of first aid measures

Self-protection of the first aider

Use personal protective equipment as required. Wear appropriate personal protective equipment, avoid direct contact. Ensure adequate ventilation. Do not breathe dust. Avoid all contact. Contaminated clothing should be laundered before reuse. Although the substance has no acute toxicity, it is advised to avoid contact with skin, eyes, and clothing.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Keep warm and at rest. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. IF exposed or concerned: Call a POISON CENTER/doctor.

Skin Contact

Wash affected skin with soap and water. Remove contaminated clothing and wash clothing before reuse. If irritation (redness, rash, blistering) develops, get medical attention.

Eye Contact

Flush eyes with water for at least 15 minutes while holding eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation develops and persists, get medical attention.

Ingestion

Rinse mouth. Do not 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

Suspected of causing cancer by inhalation. 40 percent of the mixture consists of ingredient(s) of unknown toxicity.

Indication of any immediate medical attention and special treatment needed

Remove from exposure. IF exposed or concerned: Get medical advice/attention. Treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

As appropriate for surrounding fire. In case of fire use carbon dioxide or dry agent.

Unsuitable extinguishing Media

Direct water jet may spread the fire.

Special hazards arising from the substance or mixture

May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide, Hydrogen chloride, Hydrogen Sulphide, Oxides of antimony and Oxides of sulfur.

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

SAFETY DATA SHEET



Version: 2.0
 Date of Issue: 03 May 2017
 Date of First Issue: 13 August 2014

www.vishaypg.com

ACCORDING TO OSHA HCS (29 CFR 1910.1200)

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

Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid dust generation. Do not breathe dust. Stop leak if safe to do so. Avoid all contact. Use personal protective equipment as required. See Section: 8. Although the substance has no acute toxicity, it is advised to avoid contact with skin, eyes, and clothing.

Methods and material for containment and cleaning up

Ensure suitable personal protection during removal of spillages. Sweep or shovel-up spillage and remove to a safe place. Avoid dust generation. Dampening with water can reduce dust. Transfer to a lidded container for disposal or recovery. Ventilate the area and wash spill site after material pick-up is complete. Dispose of this material and its container as hazardous waste. Do not allow to enter drains, sewers or watercourses.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Ensure adequate ventilation. Although the substance has no acute toxicity, it is advised to avoid contact with skin, eyes, and clothing. Avoid all contact. Avoid breathing dust. 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.

Conditions for safe storage, including any incompatibilities

Storage temperature
 Storage life
 Incompatible materials

Store in a cool/low-temperature, well-ventilated (dry) place away from heat and ignition sources. Keep away from direct sunlight.
 Ambient.
 Stable under normal conditions.
 Keep away from: Oxidizing agents.

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
Kaolin	1332-58-7	-	10	-	-	NIOSH Total dust
		-	5	-	-	Respirable dust
		-	15	-	-	OSHA Total dust
		-	5	-	-	Respirable dust
		-	2	-	-	ACGIH, A4 Respirable fraction
Limestone (calcium carbonate)	1317-65-3	-	10	-	-	NIOSH Total dust
		-	5	-	-	Respirable dust
		-	15	-	-	OSHA Total dust
		-	5	-	-	Respirable dust
Carbon Black	1333-86-4	-	3.5	-	-	NIOSH *
		-	0.1 mg PAHs/m ³	-	-	
		-	3.5	-	-	OSHA
		-	3	-	-	ACGIH, A3 Inhalable particulate
Antimony trioxide	1309-64-4	-	-(L)	-	-	ACGIH, A2

SAFETY DATA SHEET

Version: 2.0
Date of Issue: 03 May 2017
Date of First Issue: 13 August 2014

www.vishaypg.com

ACCORDING TO OSHA HCS (29 CFR 1910.1200)

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

* In presence of PAHs: limit PAHs to 0,1 mg/m³ TWA (detected as cyclohexane soluble extract)

(L) Exposure by all routes should be carefully controlled to levels as low as possible

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.

A3: Confirmed Animal Carcinogen with Unknown Relevance to Humans: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histological type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiological studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

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.

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. Atmospheric levels should be controlled in compliance with the occupational exposure limit.

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.

Eye/face protection



Wear eye glasses with side protection according to EN 166.

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.

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

Respiratory protection



Work in well ventilated zones or use proper respiratory protection. In case of insufficient ventilation, wear suitable respiratory equipment. Respiratory protective equipment should conform to the appropriate EN standard.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Black roll with paper release liner (Solid)
Odor	No odour.
Odor Threshold	Not available.
pH	Not applicable.
Melting Point/Freezing Point	Not available.
Initial boiling point and boiling range	Not available.
Flash Point	Not applicable.
Evaporation rate (Butyl acetate = 1)	Not applicable.
Flammability (solid, gas)	Non-flammable.
Upper/lower flammability or explosive limits	Not applicable.

SAFETY DATA SHEET

Version: 2.0
Date of Issue: 03 May 2017
Date of First Issue: 13 August 2014

www.vishaypg.com

ACCORDING TO OSHA HCS (29 CFR 1910.1200)

Vapour pressure	Not applicable.
Vapour density	Not applicable.
Relative density	1.25 (H ₂ O = 1)
Solubility(ies)	Not available.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not applicable.

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.
Conditions to avoid	Keep away from heat and direct sunlight.
Incompatible materials	Keep away from: Oxidizing agents.
Hazardous decomposition product(s)	May decompose in a fire giving off toxic fumes. Decomposition products: Carbon monoxide, Carbon dioxide, Hydrogen chloride, Hydrogen Sulphide, Oxides of antimony and Oxides of sulfur.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects (Substances in preparations / mixtures)

Acute toxicity - Ingestion	40 percent of the mixture consists of ingredient(s) of unknown toxicity. 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	40 percent of the mixture consists of ingredient(s) of unknown toxicity. Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 (Dust) > 5.0 mg/l.
Acute toxicity - Skin Contact	40 percent of the mixture consists of ingredient(s) of unknown toxicity. 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.
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	Carcinogen, Category 2; Suspected of causing 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	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

Although the substance has no acute toxicity, it is advised to avoid contact with skin, eyes, and clothing.

Delayed health effects from exposure

Suspected of causing cancer by inhalation.

Other information

NTP Report on Carcinogens
Carbon black (CAS# 1333-86-4)

SAFETY DATA SHEET



Version: 2.0
Date of Issue: 03 May 2017
Date of First Issue: 13 August 2014

www.vishaypg.com

ACCORDING TO OSHA HCS (29 CFR 1910.1200)

IARC Monographs
OSHA Designated Carcinogen

Not listed.
Carbon black (CAS# 1333-86-4) and Antimony trioxide (CAS# 1309-64-4):
Group 2B - Possibly carcinogenic to humans.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity	40% of the mixture consists of components of unknown hazards to the aquatic environment: Based upon the available data, the classification criteria are not met.
Persistence and degradability	Estimated Mixture LC50 >100 mg/l (Fish)
Bioaccumulative potential	Part of the components are poorly biodegradable.
Mobility in soil	The product has low potential for bioaccumulation.
Other adverse effects	The product is predicted to have low mobility in soil (solid). None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods	Avoid release to the environment. Dispose of wastes in an approved waste disposal facility.
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 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 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)

Kaolin: Subject to 25,000 lb reporting threshold
Limestone (Calcium carbonate): Subject to 25,000 lb reporting threshold
Polyvinyl chloride: Exempt from reporting under CDR
Carbon black: Subject to 25,000 lb reporting threshold
Antimony trioxide: Subject to 25,000 lb reporting threshold
All chemicals are not listed

EPCRA/SARA Section 302 Extremely Hazardous Substances

Antimony trioxide: Antimony compound - De Minimis limit: 1%

EPCRA Section 313 Toxics Release Inventory (TRI) Program

NIOSH Occupational Carcinogen List

Carbon black

OSHA List of highly hazardous chemicals, toxics and reactives

All chemicals are not listed

NTP Report on Carcinogens (RoC) List

All chemicals are not listed

Poison Prevention Packaging Act

All chemicals are not listed

US State Regulations

California State, Proposition 65 List

Carbon black

Antimony trioxide

California State, Safer Consumer Products Regulations

Carbon black: Candidate Chemicals List

Antimony trioxide: Candidate Chemicals List, Group Member List: Antimony and

SAFETY DATA SHEET

Version: 2.0
Date of Issue: 03 May 2017
Date of First Issue: 13 August 2014

www.vishaypg.com

ACCORDING TO OSHA HCS (29 CFR 1910.1200)

Maine State, Toxic Chemicals in Children's Products Act	Antimony Compounds Carbon black: COC list Antimony trioxide: COC list
New Jersey State Worker and Community RTK Act	Kaolin: RTKHSL Polyvinyl chloride: RTKHSL Carbon black: RTKHSL. SHHSL Antimony trioxide: RTKHSL. SHHSL
Pennsylvania State, Worker and Community RTK Act	Kaolin: Hazardous Substance List Limestone (Calcium carbonate): Hazardous Substance List Carbon black: Hazardous Substance List. Special Hazardous Substance List Antimony trioxide: Hazardous Substance List. Environmental Hazard List
Rhode Island State, Hazardous Substances RTK Act	Kaolin: Hazardous Substance List Limestone (Calcium carbonate): Hazardous Substance List Carbon black: Hazardous Substance List Antimony trioxide: Hazardous Substance List
Non-Regional IARC Monographs, List of Classifications	Carbon black: Group 2B Antimony trioxide: Group 2B

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
Revision Date 03 May 2017
Date of First Issue 13 August 2014

References: Existing Safety Data Sheet (SDS), EU Data: Harmonised Classification(s) for Antimony trioxide (CAS# 1309-64-4). Existing ECHA registration(s) for Antimony trioxide (CAS# 1309-64-4), Asphalt (CAS# 64742-93-4) and Carbon black (CAS# 1333-86-4), and the Classification and Labelling Inventory for Kaolin (CAS# 1332-58-7), Limestone (calcium carbonate) (CAS# 1317-65-3) and Polyvinyl chloride (CAS# 9002-86-2).

GHS Classification of the substance or mixture	Classification Procedure
Carcinogen, Category 2	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
Skin²: 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.

Disclaimers

Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose. Vishay Precision Group gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law. Vishay Precision Group accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.