PRODUCT NAME: ABRO Epoxy Steel Adhesive - Resin
PRODUCT NUMBER/SIZE: ES-509 / 2 oz. **Rev Date: 07/11/2015**

SECTION 1
Identification of the Substance and of the Company/Undertaking

MANUFACTURER'S NAME:	**ABRO INDUSTRIES, INC.**
ADDRESS:	**3580 Blackthorn Court South Bend, IN 46628 USA**
PRODUCT DESCRIPTION:	**Adhesive used in bonding and repairing**
COMPANY PHONE:	**574-232-8289**
EMERGENCY 24-HR TELEPHONE:	**Chemtrec: US/Canada 1-800-424-9300 International +1-703-527-3887**

SECTION 2
Hazards Identification

Classification:

Skin corrosion/irritation (chapter 3.2), Cat. 2
Eye damage/irritation (chapter 3.3), Cat. 2B
Sensitization, skin (chapter 3.4), Cat. 1

Label Pictogram(s):

Signal Word:	**Warning**
Hazard Phrases:	Causes skin irritation. Causes eye irritation. May cause an allergic skin reaction
Precautionary Phrases:	Wash hands thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapours/spray. Take off contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace.
Response:	IF ON SKIN: Wash with plenty of water. If skin irritation or a rash 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. If eye irritation persists: Get medical advice/attention.
Storage / Disposal:	Dispose of contents in hazardous or special waste collection point.

Other: Keep out of reach of children.

Other hazards which do not result in classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SECTION 3
Composition/Information on Ingredients

COMPONENTS	CAS Number	Percent by weight
Bisphenol A Epoxy Resin	25085-99-8	> 20 - < 40
Epoxy resin	28064-14-4	> 10 - < 20
Carbon black (airborne, unbound particles of respirable size)	1333-86-4	> 0.001 - < 1
Calcium carbonate (Natural)	1317-65-3	>= 20 - <= 40

SECTION 4
First Aid Measures

General information: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

After inhalation: Move person to fresh air; if effects occur, consult a physician.

After skin contact: Remove material from skin immediately by washing with soap and plenty of water.Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists.Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articlessuch as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area

After eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. Suitable emergency eye wash facility should be available in work area.

After swallowing: Ingestion: No emergency medical treatment necessary.

Most important symptoms/effects, acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of immediate medical attention and special treatment needed, if necessary

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5
Fire Fighting Measures

Suitable extinguishing agents:
Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective. Water fog, applied gently may be used as a blanket for fire extinguishment.

Extinguishing Media to Avoid: Do not use direct water stream. May spread fire.

Specific hazards arising from the chemical:
Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Phenolics. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is emitted when burned without sufficient oxygen.

Special protective actions for fire-fighters:
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

SECTION 6
Accidental Release Measures

Personal precautions, protective equipment and emergency procedures
Isolate area. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.

Environmental precautions
Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up

Contain spilled material if possible. Absorb with materials such as: Sand. Polypropylene fiber products. Polyethylene fiber products. Remove residual with soap and hot water. Collect in suitable and properly labeled containers. Residual can be removed with solvent. Solvents are not recommended for clean-up unless the recommended exposure guidelines and safe handling practices for the specific solvent are followed. Consult appropriate solvent Safety Data Sheet for handling information and exposure guidelines. See Section 13, Disposal Considerations, for additional information.

SECTION 7
Handling and Storage

Precautions for safe handling
Avoid prolonged or repeated contact with skin. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Avoid use of electric band heaters. Failures of electric band heaters have been reported to cause drums of liquid epoxy resin to explode and catch fire. Application of a direct flame to a container of liquid epoxy resin can also cause explosion and/or fire. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage, including any incompatibilities
Storage temperature: 2 - 43 °C (35 - 109 °F)

SECTION 8
Exposure Controls/Personal Protection

Control parameters

1. Carbon black (CAS: 1333-86-4)
PEL (Inhalation): 3.5 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

2. Carbon black (CAS: 1333-86-4)
PEL (Inhalation): 3.5 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

3. Carbon black (CAS: 1333-86-4)
REL (Inhalation): 3.5 mg/m3Ę without PAHs); when PAHs are present, NIOSH considers carbon black to be a potential occupational carcinogen., See Appendix A,ƀee Appendix C (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

4. Calcium Carbonate (CAS: 1317-65-3)
PEL (Inhalation): see PNOR (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

5. Calcium Carbonate, Total dust (CAS: 1317-65-3)
PEL (Inhalation): 15 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

6. Calcium Carbonate, Total dust (CAS: 1317-65-3)
PEL (Inhalation): 10 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

7. Calcium Carbonate, Total dust (CAS: 1317-65-3)
REL (Inhalation): 10 mg/m3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

8. Calcium Carbonate, Respirable fraction (CAS: 1317-65-3)
PEL (Inhalation): 5 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

9. Calcium Carbonate, Respirable fraction (CAS: 1317-65-3)
PEL (Inhalation): 5 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

10. Calcium Carbonate, Respirable fraction (CAS: 1317-65-3)
REL (Inhalation): 5 mg/m3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

11. Limestone (CAS: 1317-65-3)
PEL (Inhalation): see PNOR (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

12. Limestone, Total dust (CAS: 1317-65-3)
PEL (Inhalation): 15 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

13. Limestone, Total dust (CAS: 1317-65-3)
PEL (Inhalation): 10 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

14. Limestone, Total dust (CAS: 1317-65-3)
REL (Inhalation): 10 mg/m3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

15. Limestone, Respirable fraction (CAS: 1317-65-3)
PEL (Inhalation): 5 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

16. Limestone, Respirable fraction (CAS: 1317-65-3)
PEL (Inhalation): 5 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

17. Limestone, Respirable fraction (CAS: 1317-65-3)
REL (Inhalation): 5 mg/m3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

18. Marble (CAS: 1317-65-3)
PEL (Inhalation): See PNOR (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

19. Marble, Total dust (CAS: 1317-65-3)
PEL (Inhalation): 15 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

20. Marble, Total dust (CAS: 1317-65-3)
PEL (Inhalation): 10 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

21. Marble, Total dust (CAS: 1317-65-3)
REL (Inhalation): 10 mg/m3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

22. Marble, Respirable fraction (CAS: 1317-65-3)
PEL (Inhalation): 5 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

23. Marble, Respirable fraction (CAS: 1317-65-3)
PEL (Inhalation): 5 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

24. Marble, Respirable fraction (CAS: 1317-65-3)
REL (Inhalation): 5 mg/m3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

Appropriate engineering controls:
Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures, such as personal protective equipment (PPE):
Eye/face protection
Use safety glasses (with side shields).

Skin protection
Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.
Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Ethyl vinyl alcohol laminate ("EVAL").
Nitrile/butadiene rubber ("nitrile" or "NBR"). Neoprene. Polyvinyl chloride ("PVC" or "vinyl").
NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Body protection
Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Respiratory protection
Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

SECTION 9
Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance/form	viscous paste
Odor	Odorless to mild
Odor threshold	Not determined
pH	Not determined
Melting point/freezing point	Not applicable
Initial boiling point and boiling range	Not determined
Flash point	264C / 507F
Evaporation rate	Not determined
Flammability (solid, gas)	Not applicable
Upper/lower flammability limits	Not determined
Upper/lower explosive limits	Not applicable
Vapor pressure	Not determined
Vapor density	Not determined
Relative density	Not determined
Solubility(ies)	Not determined
Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature	Not applicable
Decomposition temperature	Not determined
Viscosity	Not determined
Explosive properties	No EEC A14
Oxidizing properties	No

SECTION 10
Stability and Reactivity

Reactivity
No dangerous reaction known under conditions of normal use.

Chemical stability
Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions
Polymerization will not occur by itself. Masses of more than one pound (0.5 kg) of product plus an aliphatic amine will cause irreversible polymerization with considerable heat build-up.

Conditions to avoid
Avoid short term exposures to temperatures above 300 °C (572 °F). Avoid prolonged exposure to temperatures above 250 °C (482 °F). Potentially violent decomposition can occur above 350 °C (662 °F). Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid.

Incompatible materials
Avoid contact with oxidizing materials. Avoid contact with: Acids. Bases. Avoid unintended contact with amines.

Hazardous decomposition products
Decomposition products depend upon temperature, air supply and the presence of other materials. Gases are released during decomposition. Uncontrolled exothermic reaction of epoxy resins release phenolics, carbon monoxide, and water.

SECTION 11
Toxicological Information

Acute toxicity:
Ingestion
LD50, rat > 15,000 mg/kg

Dermal
LD50, rabbit 23,000 mg/kg

Skin corrosion/irritation
Brief contact may cause moderate skin irritation with local redness.

Skin Sensitization: Has caused allergic skin reactions in humans. Has demonstrated the potential for contact allergy in mice.

Serious eye damage/irritation
Eye damage/eye irritation
May cause moderate eye irritation.

Respiratory or skin sensitization
Inhalation: The LC50 has not been determined.

Carcinogenicity
Many studies have been conducted to assess the potential carcinogenicity of diglycidyl ether of bisphenol A (DGEBPA). Indeed, the most recent review of the available data by the International Agency for Research on Cancer (IARC) has concluded that DGEBPA is not classified as a carcinogen. Although some weak evidence of carcinogenicity has been reported in animals, when all of the data are considered, the weight of evidence does not show that DGEBPA is carcinogenic.

Reproductive toxicity
In animal studies, did not interfere with reproduction.
Resins based on the diglycidyl ether of bisphenol A (DGEBPA) did not cause birth defects or other adverse effects on the fetus when pregnant rabbits were exposed by skin contact, the most likely route of exposure, or when pregnant rats or rabbits were exposed orally.

STOT-single exposure
No relevent data found.

STOT-repeated exposure
Except for skin sensitization, repeated exposures to low molecular weight epoxy resins of this type are not anticipated to cause any significant adverse effects.

Additional information
Genetic Toxicology: In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

SECTION 12
Ecological Information

Toxicity
Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity: LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 h: 2 mg/l
Aquatic Invertebrate Acute Toxicity: EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: 1.8 mg/l
Aquatic Plant Toxicity: ErC50, Scenedesmus capricornutum (fresh water algae), static test, Growth rate inhibition, 72 h: 11mg/l
Toxicity to Micro-organisms: IC50; Bacteria, 18 h: > 42.6 mg/l
Aquatic Invertebrates Chronic Toxicity Value: Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, NOEC: 0.3 mg/l

Persistence and degradability
Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.
Biodegradation: 12%, Exposure time: 28 days, Method: OCED 302B Test, 10 Day Window: Not applicable
Rate Constant: 6.69E-11 cm3/s, Atmospheric Half-life: 1.92h, Method: Estimated
Theoretical Oxygen Demand: 2.35 mg/mg

Bioaccumulative potential
Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient, n-octanol/water (log Pow): 3.242 Estimated.

Mobility in soil
Mobility in soil: Potential for mobility in soil is low (Koc between 500 and 2000)., Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.
Partition coefficient, soil organic carbon/water (Koc): 1,800 - 4,400 Estimated.
Henry's Law Constant (H): 4.93E-05 Pa*m3/mole.; 25 °C

Results of PBT and vPvB assessment
No data found

SECTION 13
Disposal Considerations

Disposal of the product
DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

Disposal of contaminated packaging

Dispose in normal method for emptied containers. Follow all applicable regulations.

SECTION 14
Transport Information

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

U.S. DOT	UN/ID Number: Proper shipping name: Hazard class: Packing Group: Exceptions: Environmental Hazards: Transport in Bulk: Special Precautions:	Not regulated
IMO/IMDG	UN/ID Number: Proper shipping name: Hazard class: Packing Group: Exceptions: Environmental Hazards: Transport in Bulk: Special Precautions:	Not regulated
ICAO/IATA	UN/ID Number: Proper shipping name: Hazard Class: Packing Group: Exceptions: Environmental Hazards: Transport in Bulk: Special Precautions:	Not regulated
Canada (TDG)	UN/ID Number: Proper shipping name: Hazard class: Packing Group: Exceptions: Environmental Hazards: Transport in Bulk: Special Precautions:	Not regulated
Europe (ADR)	UN/ID Number: Proper Shipping Name: Tunnel Restriction Code:	Not regulated

SECTION 15
Regulatory Information

Safety, health and environmental regulations specific for the product in question

New Jersey Right To Know Components
Common name: CARBON BLACK
CAS number: 1333-86-4

Pennsylvania Right To Know Components
Chemical name: Carbon black
CAS number: 1333-86-4

New Jersey Right To Know Components
Common name: CALCIUM CARBONATE
CAS number: 1317-65-3

Pennsylvania Right To Know Components
Chemical name: Limestone
CAS number: 1317-65-3

Chemical Safety Assessment
OSHA Hazard Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Immediate (Acute) Health Hazard Yes
Delayed (Chronic) Health Hazard No
Fire Hazard No
Reactive Hazard No
Sudden Release of Pressure Hazard No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

HMIS Rating

Health	2
Flammability	0
Physical hazard	0
Personal protection	X

NFPA Rating
Health hazard 2
Fire hazard 0
Reactivity hazard 0
Special hazard

SECTION 16
Other Information

The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein, except for conformation to contracted specifications. All information appearing herein is based upon data obtained from manufacturers and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control, and therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon, information contained herein.

This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process.

ABBREVIATIONS:

NG="NOT GIVEN"	BT="BETWEEN"
<="LESS THAN"	>="GREATER THAN"
ND = Not Determined	NA = Not Applicable

PRODUCT NAME: ABRO Epoxy Steel Adhesive - Hardener
PRODUCT NUMBER/SIZE: EC-509 / 2 oz. **Rev Date: 07/11/2015**

SECTION 1
Identification of the Substance and of the Company/Undertaking

MANUFACTURER'S NAME:	**ABRO INDUSTRIES, INC.**
ADDRESS:	**3580 Blackthorn Court South Bend, IN 46628 USA**
PRODUCT DESCRIPTION:	**Adhesive used in bonding and repairing**
COMPANY PHONE:	**574-232-8289**
EMERGENCY 24-HR TELEPHONE:	**Chemtrec: US/Canada 1-800-424-9300 International +1-703-527-3887**

SECTION 2
Hazards Identification

Classification:

Skin corrosion/irritation (chapter 3.2), Cat. 2
Eye damage/irritation (chapter 3.3), Cat. 2B

Label Pictogram(s):

Signal Word:	**Warning**
Hazard Phrases:	Causes skin irritation. Causes eye irritation.
Precautionary Phrases:	Wash hands thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Take off contaminated clothing and wash it before reuse.
Response:	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. If eye irritation persists: Get medical advice/attention.
Storage / Disposal:	Dispose of contents in hazardous or special waste collection point.
Other:	Keep out of reach of children.

SECTION 3
Composition/Information on Ingredients

COMPONENTS	CAS Number	Percent by weight
2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL	90-72-2	>= 5 - <= 15
Calcium carbonate (Natural)	1317-65-3	>= 5 - <= 25
TITANIUM DIOXIDE	13463-67-7	>= 0.1 - <= 1

SECTION 4
First Aid Measures

General advice:

If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin.
Keep out of reach of children.

After inhalation:

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

After skin contact:

Flush contaminated skin with plenty of water. Continue to rinse for at least 20 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

After eye contact:

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention

After swallowing:

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Personal protective equipment for first-aid responders

No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Most important symptoms/effects, acute and delayed
Causes serious eye irritation.
Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Causes skin irritation
If ingested, Irritating to mouth, throat and stomach.

Indication of immediate medical attention and special treatment needed, if necessary
Notes to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

No specific treatment.

SECTION 5
Fire Fighting Measures

Suitable extinguishing media:
Not flammable by WHMIS/OSHA criteria.

Suitable extinguishing media: Treat for surrounding material.
Unsuitable extinguishing media: Not available

Specific hazards arising from the chemical:
Not available

Special protective actions for fire-fighters:
Specific hazards arising from the chemical: Not available

Protective equipment for firefighters: Firefighters should wear full protective clothing including self-contained breathing apparatus.

Hazardous combustion products: May include and are not limited to: Oxides of carbon. Oxides of nitrogen. Oxides of sulphur.

Further information
Explosion data:
Sensitivity to mechanical impact: Not available
Sensitivity to static discharge: Not available

SECTION 6
Accidental Release Measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.

Environmental precautions
Prevent entry into waterways, sewers, basements or confined areas.

Methods and materials for containment and cleaning up
Stop the flow of material, if this is without risk.

Before attempting clean up, refer to hazard data given above. Dampen material with water and use shovel or scoop to collect material in clean container for proper disposal. Rinse area with water. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice.

SECTION 7
Handling and Storage

Precautions for safe handling
Use good industrial hygiene practices in handling this material.
Avoid contact with eyes, skin and clothing.
Avoid prolonged or repeated skin contact with this material.
Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities
Keep out of reach of children. Store in a closed container away from incompatible materials

SECTION 8
Exposure Controls/Personal Protection

Control parameters

1. Calcium Carbonate (CAS: 1317-65-3)
PEL (Inhalation): see PNOR (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

2. Calcium Carbonate, Total dust (CAS: 1317-65-3)
PEL (Inhalation): 15 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

3. Calcium Carbonate, Total dust (CAS: 1317-65-3)
PEL (Inhalation): 10 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

4. Calcium Carbonate, Total dust (CAS: 1317-65-3)
REL (Inhalation): 10 mg/m3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

5. Calcium Carbonate, Respirable fraction (CAS: 1317-65-3)
PEL (Inhalation): 5 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

6. Calcium Carbonate, Respirable fraction (CAS: 1317-65-3)
PEL (Inhalation): 5 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

7. Calcium Carbonate, Respirable fraction (CAS: 1317-65-3)
REL (Inhalation): 5 mg/m3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

8. Limestone (CAS: 1317-65-3)
PEL (Inhalation): see PNOR (Cal/OSHA)

OSHA Annotated Table Z-1, www.osha.gov

9. Limestone, Total dust (CAS: 1317-65-3)
PEL (Inhalation): 15 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

10. Limestone, Total dust (CAS: 1317-65-3)
PEL (Inhalation): 10 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

11. Limestone, Total dust (CAS: 1317-65-3)
REL (Inhalation): 10 mg/m3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

12. Limestone, Respirable fraction (CAS: 1317-65-3)
PEL (Inhalation): 5 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

13. Limestone, Respirable fraction (CAS: 1317-65-3)
PEL (Inhalation): 5 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

14. Limestone, Respirable fraction (CAS: 1317-65-3)
REL (Inhalation): 5 mg/m3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

15. Marble (CAS: 1317-65-3)
PEL (Inhalation): See PNOR (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

16. Marble, Total dust (CAS: 1317-65-3)
PEL (Inhalation): 15 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

17. Marble, Total dust (CAS: 1317-65-3)
PEL (Inhalation): 10 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

18. Marble, Total dust (CAS: 1317-65-3)
REL (Inhalation): 10 mg/m3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

19. Marble, Respirable fraction (CAS: 1317-65-3)
PEL (Inhalation): 5 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

20. Marble, Respirable fraction (CAS: 1317-65-3)
PEL (Inhalation): 5 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

21. Marble, Respirable fraction (CAS: 1317-65-3)
REL (Inhalation): 5 mg/m3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

22. Titanium dioxide - Total dust (CAS: 13463-67-7)

PEL (Inhalation): 15 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

23. Titanium dioxide - Total dust (CAS: 13463-67-7)
PEL (Inhalation): See PNOR (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

24. Titanium dioxide - Total dust (CAS: 13463-67-7)
REL (Inhalation): Ca, (ultrafine particles), 2.4 mg/m3Ęfine), 0.3 mg/m3(ultrafine), See Appendix A, See Appendix C (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

Appropriate engineering controls:
General ventilation normally adequate.

Individual protection measures, such as personal protective equipment (PPE):
Eye/face protection
Safety glasses if eye contact is possible.

Skin protection
Rubber gloves. Confirm with a reputable supplier first.

Body protection
As required by employer code

General hygiene considerations: Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. Wash hands before breaks and immediately after handling the product.

Respiratory protection
Where exposure guideline levels may be exceeded, use an approved NIOSH respirator

SECTION 9
Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance/form	Paste
Odor	Mercaptan-like odor
Odor threshold	Not available
pH	Not available
Melting point/freezing point	Not available
Initial boiling point and boiling range	Not available
Flash point	Closed cup: >93.3°C (>199.9°F) [Pensky-Martens.
Evaporation rate	Not available
Flammability (solid, gas)	Highly flammable in the presence of the following materials or conditions: heat.
Upper/lower flammability limits	Not applicable
Upper/lower explosive limits	Not applicable
Vapor pressure	Not available
Vapor density	Not available
Relative density	1.8
Solubility(ies)	Not available

Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	>220C (>392F)
Viscosity	Dynamic (room temperature): 1000 to 1600 mPa·s (1000 to 1600 cP)
Explosive properties	Not available
Oxidizing properties	Not available

Other safety information
VOC % content <1%

SECTION 10
Stability and Reactivity

Reactivity
None known

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
Hazardous polymerization does not occur.

Conditions to avoid
No specific data

Incompatible materials
Highly reactive or incompatible with the following materials: oxidizing materials, acids and alkalis.

Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11
Toxicological Information

Acute toxicity
2,4,6-Tris(dimethylaminomethyl) phenol: LD50 Dermal Rat 1280 mg/kg - LD50 Oral Rat 1200 mg/kg

Potential acute health effects:
Eye Contact: Causes serious eye irritation
Inhalation: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin Contact: Causes skin irritation.
Ingestion: Irritating to mouth, throat and stomach.

Skin corrosion/irritation
2,4,6-Tris(dimethylaminomethyl) phenol
Skin - Mild irritant Rat - 0.025 mL -
Skin - Severe irritant Rat - 0.25 mL -
Skin - Severe irritant Rabbit - 24 hours 2 mg

Serious eye damage/irritation
Eyes - Severe irritant Rabbit - 24 hours 50 µg

Respiratory or skin sensitization
There is no data available.

Germ cell mutagenicity
There is no data available.

Carcinogenicity
There is no data available.

Reproductive toxicity
There is no data available.

STOT-single exposure
No known significant effects or critical hazards.

STOT-repeated exposure
No known significant effects or critical hazards.

Aspiration hazard
There is no data available.

Additional information
Numerical measures of toxicity - Acute Toxicity estimates
Oral ATE value = 10909.1 mg/kg
Dermal ATE value = 11636.4 mg/kg

SECTION 12
Ecological Information

Toxicity
There is no data available.

Persistence and degradability
There is no data available.

Bioaccumulative potential
low

Mobility in soil
Not available

Other adverse effects
No known significant effects or critical hazards.

SECTION 13
Disposal Considerations

Disposal of the product
The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-

recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14
Transport Information

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

U.S. DOT	UN/ID Number: Proper shipping name: Hazard class: Packing Group: Exceptions: Environmental Hazards: Transport in Bulk: Special Precautions:	Not regulated
IMO/IMDG	UN/ID Number: Proper shipping name: Hazard class: Packing Group: Exceptions: Environmental Hazards: Transport in Bulk: Special Precautions:	Not regulated
ICAO/IATA	UN/ID Number: Proper shipping name: Hazard Class: Packing Group: Exceptions: Environmental Hazards: Transport in Bulk: Special Precautions:	Not regulated
Canada (TDG)	UN/ID Number: Proper shipping name: Hazard class: Packing Group: Exceptions: Environmental Hazards: Transport in Bulk: Special Precautions:	Not regulated
Europe	UN/ID Number:	Not regulated

(ADR) Proper Shipping Name:
Tunnel Restriction Code:

SECTION 15
Regulatory Information

Safety, health and environmental regulations specific for the product in question

New Jersey Right To Know Components
Common name: CALCIUM CARBONATE
CAS number: 1317-65-3

Pennsylvania Right To Know Components
Chemical name: Limestone
CAS number: 1317-65-3

New Jersey Right To Know Components
Common name: TITANIUM DIOXIDE
CAS number: 13463-67-7

Pennsylvania Right To Know Components
Chemical name: Titanium oxide
CAS number: 13463-67-7

Chemical Safety Assessment
U.S. Federal regulations: TSCA 8(a) CDR Exempt/Partial Exemption: Not determined
United States inventory (TSCA 8b): Not determined

CLEAN AIR ACT SECTION 112: Not listed
CLEAN AIR ACT SECTION 602 - CLASS I SUBSTANCES: Not listed
CLEAR AIR ACT SECTION 602 - CLASS II STUBSTANCES: Not listed
DEA LIST I CHEMICALS: Not listed
DEA LIST II CHEMICALS: Not listed

SARA 302/304: No products were found
SARA 304 RQ: Not applicable
SARA 311/312: Immediate (acute) health hazard
Composition/Information on ingredients: 2,4,6-Tris(dimethylaminomethyl)phenol 5-15%, Immediate (acute) health hazard

CALIFORNIA PROP. 65: No products were found

NFPA Rating
Health hazard 2
Fire hazard 1
Reactivity hazard 0
Special hazard

SECTION 16
Other Information

The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein, except for conformation to contracted

specifications. All information appearing herein is based upon data obtained from manufacturers and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control, and therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon, information contained herein.

This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process.

ABBREVIATIONS:

NG="NOT GIVEN"	BT="BETWEEN"
<="LESS THAN"	>="GREATER THAN"
ND = Not Determined	NA = Not Applicable