

Section 1: Product and Company Identification

Polymerica, Inc.
3821 Collins Lane
Louisville, KY 40245
Business: 502-326-3670
FAX: 502-326-3632

Product Name: Granitech Epoxy Binder– Part A
Generic Name:
Synonyms: NA
Product Description: Reactive resin-forming component
CAS # NA – mixture
Date of Revision: 21 August 2009

24-Hour Emergency Phone Number: (800) 535-5053 (INFOTRAC) U.S. & Canada
International calls: (352) 323-3500
Use only for spills and releases.

Section 2: Hazard Identification

Viscous liquid. **Emergency Overview:** May irritate eyes and skin. May be harmful if ingested, inhaled or absorbed through skin. Use with adequate ventilation.

HMIS HEALTH	1
HMIS FLAMMABILITY	1
HMIS REACTIVITY	1
PERSONAL PROTECTION	C

OSHA Regulatory Status: This material is considered hazardous under the OSHA standard.

WHMIS Classification: D2B

Potential Health Effects:

Inhalation: Low vapor pressure makes this route unlikely unless misting of the liquid occurs. At higher temperatures fumes may cause irritation.

Ingestion: Low order of toxicity

Skin Contact: May cause irritation. May cause sensitization in susceptible persons.

Eye Contact: Can cause irritation, redness and tearing. Abrasive particles can scratch cornea.

Chronic Exposure: No information found.

Aggravation of Pre-existing Conditions: No information found.

Target Organs: Eyes, skin

Section 3: Composition / Information On Ingredients

Component	Common Names, Synonyms	CAS #	EINECS	Weight %
Oxirane, 2,2'-4-butylidene-bisphenyleneoxymethylene	Epoxy resin; DGEBA	25085-99-8	NLP # 500-033-5	> 70
1,2-Benzenedicarboxylic acid, di-C9-C11 branched alkyl ester	DIDP	68515-49-1	271-091-4	< 10
4-Nonylphenol		84852-15-3	284-325-5	< 15
Benzyl alcohol	Phenylmethanol	100-51-6	202-859-9	< 10

Non-hazardous components may or may not be listed. Carcinogens are listed when present at 0.1% or more; components which are otherwise hazardous according to OSHA are listed when present at 1.0% or more. This is not intended to be complete compositional disclosure. See Section 15 for applicable states right to know and other regulatory information.

Section 4: First Aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion: DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin: Immediately flush skin with plenty of water for at least 15 minutes. Get medical attention if irritation develops.

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Note to Physicians: N/A

Section 5: Fire Fighting Measures

Fire: Flash point: 95°C (203°F), closed cup

Explosion: Not considered an explosion hazard.

Extinguishing Media: Water spray, dry chemical, alcohol foam or carbon dioxide. Water spray may be used to keep fire exposed containers cool.

Special Precautions: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

NFPA Rating: Health - 1 Flammability - 1 Reactivity - 1 Other – NA

Section 6: Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

Section 7: Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Separate from incompatibles, combustibles, organic or other readily oxidizable materials. Containers of this material may be hazardous when empty since they retain product residues (liquid, vapors); observe all warnings and precautions listed for the product.

Section 8: Exposure Control / Personal Protection

Exposure Guidelines:

Component	CAS #	OSHA PEL	ACGIH TLV	NIOSH TLV
Oxirane, 2,2'-4-butylidene-bisphenyleneoxymethylene	25085-99-8	None established	None established	None established
1,2-Benzenedicarboxylic acid, di-C9-C11 branched alkyl ester	68515-49-1	None established	None established	None established
4-Nonylphenol	84852-15-3	None established	None established	None established
Benzyl alcohol	100-51-6	None established	None established	None established

Personal Protective Equipment:

Skin Contact: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Nitrile or NBR gloves are recommended.

Eye Contact: Use chemical safety goggles and/or full face shield where misting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Inhalation: Use NIOSH-approved vapor respirator if exposure is unknown or exceeds permissible limits. A respiratory protection program that meets OSHA's 29 CFR 1910.134 or ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Engineering Controls: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Section 9: Physical and Chemical Properties			
Appearance	Pale viscous liquid	Specific Gravity (g/mL)	1.11
Odor	Negligible	pH	N/A
Odor Threshold	ND	Solubility in water	Very low
Melting Point	ND	% Volatiles	<2%
Boiling Point	> 200°C (> 329°F)	Evaporation Rate	ND
Flash Point	95°C (203°F)	Vapor Pressure	ND
VOC as component	0 g/L	VOC as applied	0 g/L

Section 10: Stability and Reactivity

Chemical Stability: This product is stable in closed containers at room temperature.

Hazardous Decomposition Products: Carbon oxides (CO, CO₂), organic acids and aldehydes

Hazardous Polymerization: Polymerization can be initiated by mixing with amines, sulfides, strong bases which can cause heating and pressure build-up.

Incompatibilities: Strong oxidizers, acids, sparks, flame, heat, moisture

Conditions to Avoid: Incompatible materials, combustible materials.

Section 11: Toxicological Information

Acute Dose Effects: Eyes: No information found.

Skin: Benzyl alcohol: Rabbit LD50: 2000 mg/kg; Draize test, Rabbit: 100 mg/24H Moderate; Oxirane, 2,2'-4-butyldiene-bisphenyleneoxymethylene: Rabbit LD50: 6000 mg/kg; 4-Nonylphenol: Rat LD50 = 3160 mg/kg

Oral: Benzyl alcohol: Mouse LD50: 1360 mg/kg; Rabbit LD50: 1040 mg/kg; Rat LD50 = 1230 mg/kg; Oxirane, 2,2'-4-butyldiene-bisphenyleneoxymethylene: Rat LD50: >2400 mg/kg; 4-Nonylphenol: Rat LD50 = 1300 mg/kg

Inhalation: Benzyl alcohol: Mouse LC50: >500 mg/m³; Rat LC50 >500 mg/m³

Section 12: Ecological Information

Environmental Fate: This product is not expected to bioaccumulate. This product is not readily biodegradable.

Ecotoxicity: Benzyl alcohol: 96 Hr LC50 Fathead minnow (*Pimephales promelas*) 460 mg/L (static); 96 Hr LC50 *Lepomis macrochirus* 10 mg/L (static); 3 Hr EC50 *Anabaena variabilis* 35 mg/L; 15 min EC50 *Photobacterium phosphoreum* 63.7 mg/L; 30 min EC50 *Photobacterium phosphoreum* 71.4 mg/L; 48 Hr EC50 water flea (*Daphnia magna*) 23 mg/L

4-Nonylphenol: 96 Hr Flow-through LC50 Fathead minnow (*Pimephales promelas*) 0.31 mg/L.

Section 13: Disposal Considerations

As a waste, this material in its raw form IS NOT considered a HAZARDOUS WASTE under RCRA (29 CFR 261).

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Section 14: Transport Information

U.S. Domestic Ground **Proper Shipping Name:** Not regulated for transport
DOT Hazard Class: N/A
UN Number: N/A
Packing Group: N/A

U.S. Domestic Air **Proper Shipping Name:** Not regulated for transport
DOT Hazard Class: N/A
UN Number: N/A
Packing Group: N/A

Canadian TDG **Proper Shipping Name:** Not regulated for transport
DOT Hazard Class: N/A
UN Number: N/A
Packing Group: N/A

International Air **Proper Shipping Name:** Not regulated for transport
DOT Hazard Class: N/A
UN Number: N/A
Packing Group: N/A

CERCLA Reportable Quantity (RQ): N/A

Releases exceeding the reportable quantity (RQ) must be reported to the National Response Center **(800) 424-8802**.
This data provided for information only. The description shown may not apply to all shipping situations.
Consult 49 CFR, or appropriate regulations to properly classify your shipment for transportation.

Section 15: Regulatory Information

TSCA Chemical Inventory: All of the chemicals in this product are listed on the TSCA Inventory.

TSCA Sec 4 Chemical Test Rule: None of the chemicals in this product are under a Chemical Test Rule.

TSCA Sec 8(d): None of the chemicals in this product are on the Health and Safety Reporting List.

TSCA Sec 12(b) Notices of Export: None of the chemicals in this product are on this list.

TSCA Significant New Use Rule (SNUR): None of the chemicals in this product are on this list.

SARA Sec 302 (EHS) TPQ: None of the chemicals in this product have a TPQ.

SARA Sec 302 (EHS) RQ: None of the chemicals in this product have a RQ.

SARA Sec 311/312: Acute – YES; Chronic – NO; Fire – NO; Release of Pressure – NO; Reactivity – NO

SARA 313 List: None of the chemicals in this product is reportable under Section 313 Title III and 40 CFR Part 372.

CERCLA Hazardous Substances and corresponding RQs: N/A

RCRA: None of the chemicals in this product are on this list.

Clean Air Act: Hazardous Air Pollutants? NO **Class 1 Ozone Depletors?** NO **Class 2 Ozone Depletors?** NO

Clean Water Act: Hazardous Substance? NO **Priority Pollutant?** NO **Toxic Pollutant?** NO

Chemical Weapons Convention: None of the chemicals in this product are on this list.

Drug Enforcement Agency (DEA) CDTA: None of the chemicals in this product are on this list.

OSHA: None of the chemicals in this product are considered Highly Hazardous by OSHA.

State Right-to-Know Lists: Oxirane, 2,2'-4-butyldiene-bisphenyleneoxymethylene is found on the Right-to-Know lists of New Jersey and Pennsylvania. Benzyl alcohol is found on the Right-to-Know lists of Pennsylvania, Minnesota and Massachusetts.

California Proposition 65: None of the components of this product are listed.

Canadian: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations. The components in this product are listed, or exempt from listing, on the Canadian Domestic Substances List.

WHMIS Classification: D2B

Ingredient Disclosure List: Benzyl alcohol is listed on the Canadian Ingredient Disclosure List.

Section 16: Other Information

See Section 16 at very end of this document. All notes and claims that would appear in this section are found there.

Section 1: Product and Company Identification

Polymerica, Inc.
3821 Collins Lane
Louisville, KY 40245
Business: 502-326-3670
FAX: 502-326-3632

Product Name: Granitech Epoxy Binder – Part B
Generic Name:
Synonyms: NA
Product Description: Reactive resin-forming component
CAS # NA – mixture
Date of Revision: 21 August 2009

24-Hour Emergency Phone Number: (800) 535-5053 (INFOTRAC) U.S. & Canada
International calls: (352) 323-3500
Use only for spills and releases.

Section 2: Hazard Identification

Yellow liquid. **Emergency Overview:** Corrosive! May cause eye or skin burns. Harmful if ingested, inhaled or absorbed through skin. Use with adequate ventilation.

HMIS HEALTH	2
HMIS FLAMMABILITY	1
HMIS REACTIVITY	1
PERSONAL PROTECTION	C

OSHA Regulatory Status: This material is considered hazardous under the OSHA standard.

WHMIS Classification: E **WHMIS Controlled**

Potential Health Effects:

Inhalation: Causes irritation or burns to respiratory tract. Low vapor pressure makes this route unlikely unless misting of the liquid occurs.

Ingestion: Harmful if swallowed. Causes burns to mucous membranes

Skin Contact: Causes irritation or burns with reddening, pain or itching. May cause allergic reactions or sensitization in susceptible persons.

Eye Contact: Causes burns or irritation.

Chronic Exposure: No information found.

Aggravation of Pre-existing Conditions: No information found.

Target Organs: Eyes, skin, gastrointestinal tract

Section 3: Composition / Information On Ingredients

Component	Common Names, Synonyms	CAS #	EINECS	Weight %
Polyoxypropylenediamine		9046-10-0	polymer	> 80
1,3-cyclohexanedimethanamine	1,3-bis(aminomethyl)cyclohexane	2579-20-6	219-941-5	< 20

Non-hazardous components may or may not be listed. Carcinogens are listed when present at 0.1% or more; components which are otherwise hazardous according to OSHA are listed when present at 1.0% or more. This is not intended to be complete compositional disclosure. See Section 15 for applicable states right to know and other regulatory information.

Section 4: First Aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion: DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin: Immediately flush skin with plenty of water for at least 15 minutes. Get medical attention if irritation develops.

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Note to Physicians: N/A

Section 5: Fire Fighting Measures

Fire: Flash point: 124°C (250°F) Closed cup

Explosion: Not considered an explosion hazard.

Extinguishing Media: Water spray, dry chemical, alcohol foam or carbon dioxide. Water spray may be used to keep fire exposed containers cool.

Special Precautions: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

NFPA Rating: Health - 2 Flammability - 1 Reactivity - 1 Other – NA

Section 6: Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

Section 7: Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Separate from incompatibles, combustibles, organic or other readily oxidizable materials. Containers of this material may be hazardous when empty since they retain product residues (liquid, vapors); observe all warnings and precautions listed for the product.

Section 8: Exposure Control / Personal Protection

Exposure Guidelines:

Component	CAS #	OSHA PEL	ACGIH TLV	NIOSH TLV
Polyoxypropylenediamine	9046-10-0	None established	None established	None established
1,3-cyclohexanedimethanamine	2579-20-6	None established	None established	None established

Personal Protective Equipment:

Skin Contact: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Nitrile or NBR gloves are recommended.

Eye Contact: Use chemical safety goggles and/or full face shield where misting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Inhalation: Use NIOSH-approved vapor respirator if exposure is unknown or exceeds permissible limits. A respiratory protection program that meets OSHA's 29 CFR 1910.134 or ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Engineering Controls: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Section 9: Physical and Chemical Properties

Appearance	Colorless to yellow liquid	Specific Gravity (g/mL)	0.9476
Odor	Ammonical	pH	N/A
Odor Threshold	ND	Solubility in water	Very low
Melting Point	ND	% Volatiles	<2%
Boiling Point	> 200°C (> 392°F)	Evaporation Rate	ND
Flash Point	124°C (250°F)	Vapor Pressure	ND
VOC as component	0 g/L	VOC as applied	0 g/L

Section 10: Stability and Reactivity

Chemical Stability: This product is stable in closed containers at room temperature.

Hazardous Decomposition Products: Carbon oxides (CO, CO₂), nitrogen oxides (NO₂, N₂O, NO)

Incompatibilities: Strong oxidizers, acids, sparks, flame, heat, moisture

Conditions to Avoid: Incompatible materials, combustible materials.

Section 11: Toxicological Information

Acute Dose Effects: Eyes: No information found.

Skin: 1,3-cyclohexanedimethanamine: Rabbit LD50: 1700 mg/kg; Polyoxypropylenediamine: Rabbit LD50:2980 mg/kg

Oral: 1,3-cyclohexanedimethanamine: Rat LD50: 880 mg/kg; Polyoxypropylenediamine: Rat LD50: 2880 mg/kg

Inhalation: No information found.

Section 12: Ecological Information

Environmental Fate: This product is not expected to bioaccumulate. This product is not readily biodegradable.

Ecotoxicity: Polyoxypropylenediamine: Golden orfe (*Leuciscus idus*): LC50: 130 mg/L; Bacteria (*Pseudomonas putida*): 90 mg/L

Section 13: Disposal Considerations

As a waste, this material in its raw form IS NOT considered a HAZARDOUS WASTE under RCRA (29 CFR 261).

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Section 14: Transport Information

U.S. Domestic Ground **Proper Shipping Name:** Amines, liquid, corrosive, n.o.s. (contains Polyoxypropylenediamine and 1,3-cyclohexanedimethanamine)

DOT Hazard Class: 8

UN Number: UN 2735

Packing Group: III

U.S. Domestic Air **Proper Shipping Name:** Amines, liquid, corrosive, n.o.s. (contains Polyoxypropylenediamine and 1,3-cyclohexanedimethanamine)

DOT Hazard Class: 8

UN Number: UN 2735

Packing Group: III

Canadian TDG **Proper Shipping Name:** Amines, liquid, corrosive, n.o.s. (contains Polyoxypropylenediamine and 1,3-cyclohexanedimethanamine)

DOT Hazard Class: 8

UN Number: UN 2735

Packing Group: III

International Air **Proper Shipping Name:** Amines, liquid, corrosive, n.o.s. (contains Polyoxypropylenediamine and 1,3-cyclohexanedimethanamine)

DOT Hazard Class: 8

UN Number: UN 2735

Packing Group: III

CERCLA Reportable Quantity (RQ): N/A

Releases exceeding the reportable quantity (RQ) must be reported to the National Response Center (800) 424-8802.

This data provided for information only. The description shown may not apply to all shipping situations.

Consult 49 CFR, or appropriate regulations to properly classify your shipment for transportation.

Section 15: Regulatory Information

TSCA Chemical Inventory: All of the chemicals in this product are listed on the TSCA Inventory.

TSCA Sec 4 Chemical Test Rule: None of the chemicals in this product are under a Chemical Test Rule.

TSCA Sec 8(d): None of the chemicals in this product are on the Health and Safety Reporting List.

TSCA Sec 12(b) Notices of Export: None of the chemicals in this product are on this list.

TSCA Significant New Use Rule (SNUR): None of the chemicals in this product are on this list.

SARA Sec 302 (EHS) TPQ: None of the chemicals in this product have a TPQ.

SARA Sec 302 (EHS) RQ: None of the chemicals in this product have a RQ.

SARA Sec 311/312: Acute – YES; Chronic – NO; Fire – NO; Release of Pressure – NO; Reactivity – NO

SARA 313 List: None of the chemicals in this product is reportable under Section 313 Title III and 40 CFR Part 372.

CERCLA Hazardous Substances and corresponding RQs: N/A

RCRA: None of the chemicals in this product are on this list.

Clean Air Act: Hazardous Air Pollutants? NO **Class 1 Ozone Depletors?** NO **Class 2 Ozone Depletors?** NO

Clean Water Act: Hazardous Substance? NO **Priority Pollutant?** NO **Toxic Pollutant?** NO

Chemical Weapons Convention: None of the chemicals in this product are on this list.

Drug Enforcement Agency (DEA) CDTA: None of the chemicals in this product are on this list.

OSHA: None of the chemicals in this product are considered Highly Hazardous by OSHA.

State Right-to-Know Lists: 1,3-cyclohexanedimethanamine is found on the Right-to-Know lists of New Jersey and Pennsylvania. Polyoxypropylenediamine is not found on the Right-to-Know lists of California, New Jersey, Florida, Pennsylvania, Minnesota or Massachusetts.

Canadian: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.

The components in this product are listed, or exempt from listing, on the Canadian Domestic Substances List.

WHMIS Classification: E - WHMIS Controlled

Ingredient Disclosure List: 1,3-cyclohexanedimethanamine is listed on the Canadian Ingredient Disclosure List.

Section 16: Other Information

See Section 16 at very end of this document. All notes and claims that would appear in this section are found there.

Section 1: Product and Company Identification

Polymerica, Inc.
3821 Collins Lane
Louisville, KY 40245
Business: 502-326-3670
FAX: 502-326-3632

Product Name: Granitech Epoxy Binder– Part C
Generic Name:
Synonyms: NA
Product Description: Mineral component of cultured granite
CAS # NA – mixture
Date of Revision: 21 August 2009

24-Hour Emergency Phone Number: (800) 535-5053 (INFOTRAC) U.S. & Canada
International calls: (352) 323-3500
Use only for spills and releases.

Section 2: Hazard Identification

Dense powder of various colors. **Emergency Overview:** May irritate eyes and skin. May be harmful if inhaled. Use with adequate ventilation.

HMIS HEALTH	1
HMIS FLAMMABILITY	0
HMIS REACTIVITY	0
PERSONAL PROTECTION	C

OSHA Regulatory Status: This material is considered hazardous under the OSHA standard.

WHMIS Classification: D2A WHMIS Controlled

Potential Health Effects:

Inhalation: Respiratory tract irritation.

Ingestion: Low order of toxicity.

Skin Contact: May cause irritation. May cause sensitization in susceptible persons.

Eye Contact: Can cause irritation, redness and tearing. Abrasive particles can scratch cornea.

Chronic Exposure: No information found.

Aggravation of Pre-existing Conditions: No information found.

Target Organs: Eyes, respiratory tract

Section 3: Composition / Information On Ingredients

Component	Common Names, Synonyms	CAS #	EINECS	Weight %
Aluminum hydroxide	Alumina hydrate	21645-51-2	244-492-7	< 90
Titanium dioxide	Titania, Titanium (IV) oxide	13463-67-7	236-675-5	< 10

Non-hazardous components may or may not be listed. Carcinogens are listed when present at 0.1% or more; components which are otherwise hazardous according to OSHA are listed when present at 1.0% or more. This is not intended to be complete compositional disclosure. See Section 15 for applicable states right to know and other regulatory information.

Section 4: First Aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion: DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin: Immediately flush skin with plenty of water for at least 15 minutes. Get medical attention if irritation develops.

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Note to Physicians: N/A

Section 5: Fire Fighting Measures

Fire: Flash point: Not flammable

Explosion: Not considered an explosion hazard. Dust not known to form explosive mixtures.

Extinguishing Media: Any media suitable for the surrounding fire.

Special Precautions: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

NFPA Rating: Health - 1 Flammability - 0 Reactivity - 1 Other – NA

Section 6: Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover solid when possible and place in a chemical waste container. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

Section 7: Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Separate from incompatibles, combustibles, organic or other readily oxidizable materials. Containers of this material may be hazardous when empty since they retain product residues (liquid, vapors); observe all warnings and precautions listed for the product.

Section 8: Exposure Control / Personal Protection

Exposure Guidelines:

Component	CAS #	OSHA PEL	ACGIH TLV	NIOSH TLV
Aluminum hydroxide	21645-51-2	None established	2 mg/m ³ as Al	None established
Titanium dioxide	13463-67-7	15 mg/m ³ total dust	10 mg/m ³	5000 mg/m ³ IDLH

Personal Protective Equipment:

Skin Contact: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Nitrile or NBR gloves are recommended.

Eye Contact: Use chemical safety goggles and/or full face shield where misting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Inhalation: Use NIOSH-approved vapor respirator if exposure is unknown or exceeds permissible limits. A respiratory protection program that meets OSHA's 29 CFR 1910.134 or ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Engineering Controls: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Section 9: Physical and Chemical Properties

Appearance	Dense powder color varies	Specific Gravity (g/mL)	2.42 +
Odor	Negligible	pH	N/A
Odor Threshold	ND	Solubility in water	Very low
Melting Point	ND	% Volatiles	None
Boiling Point	ND	Evaporation Rate	ND
Flash Point	ND	Vapor Pressure	ND
VOC as component	0 g/L	VOC as applied	0 g/L

Section 10: Stability and Reactivity

Chemical Stability: This product is stable in closed containers at room temperature.

Hazardous Decomposition Products: Carbon oxides (CO, CO₂), organic acids and aldehydes

Hazardous Polymerization: Polymerization can be initiated by mixing with amines, sulfides, strong bases which can cause heating and pressure build-up.

Incompatibilities: Strong oxidizers, acids, sparks, flame, heat, moisture

Conditions to Avoid: Incompatible materials, combustible materials.

Section 11: Toxicological Information

Acute Dose Effects: Eyes: No information found.

Skin:

Oral:

Inhalation: No information found.

Section 12: Ecological Information

Environmental Fate: This product is not expected to bioaccumulate. This product is not readily biodegradable.

Ecotoxicity: Titanium dioxide: Water flea: (*Daphnia magna*) LC50 = 32-32.5 mg/L; 30 day; EC₀ Bacteria: EC₀ = 5 g/L
Pseudomonas fluorescens: EC₀ > 10000 mg/L / 24H; *Pseudomonas fluorescens*: EC₀ > 5000 mg/L / 24H; Fish:
Phoxinus phoxinus: LC₀ >=1000 mg/L / 30D *Coregonus autumnalis migratorius* G: LC₀ = 3mg/L / 30D; *Cyprinodon*
variegatus: LC50 >240 mg/L / 96H; Opossum shrimp: *Mysidopsis almyra*: LC50 >300 mg/L / 96H

Section 13: Disposal Considerations

As a waste, this material in its raw form IS NOT considered a HAZARDOUS WASTE under RCRA (29 CFR 261).

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Section 14: Transport Information

U.S. Domestic Ground **Proper Shipping Name:** Not regulated for transport
DOT Hazard Class: N/A
UN Number: N/A
Packing Group: N/A

U.S. Domestic Air **Proper Shipping Name:** Not regulated for transport
DOT Hazard Class: N/A
UN Number: N/A
Packing Group: N/A

Canadian TDG **Proper Shipping Name:** Not regulated for transport
DOT Hazard Class: N/A
UN Number: N/A
Packing Group: N/A

International Air **Proper Shipping Name:** Not regulated for transport
DOT Hazard Class: N/A
UN Number: N/A
Packing Group: N/A

CERCLA Reportable Quantity (RQ): N/A

Releases exceeding the reportable quantity (RQ) must be reported to the National Response Center (800) 424-8802.

This data provided for information only. The description shown may not apply to all shipping situations. Consult 49 CFR, or appropriate regulations to properly classify your shipment for transportation.

Section 15: Regulatory Information

TSCA Chemical Inventory: All of the chemicals in this product are listed on the TSCA Inventory.

TSCA Sec 4 Chemical Test Rule: None of the chemicals in this product are under a Chemical Test Rule.

TSCA Sec 8(d): None of the chemicals in this product are on the Health and Safety Reporting List.

TSCA Sec 12(b) Notices of Export: None of the chemicals in this product are on this list.

TSCA Significant New Use Rule (SNUR): None of the chemicals in this product are on this list.

SARA Sec 302 (EHS) TPQ: None of the chemicals in this product have a TPQ.

SARA Sec 302 (EHS) RQ: None of the chemicals in this product have a RQ.

SARA Sec 311/312: Acute – YES; Chronic – NO; Fire – NO; Release of Pressure – NO; Reactivity – NO

SARA 313 List: None of the chemicals in this product is reportable under Section 313 Title III and 40 CFR Part 372.

CERCLA Hazardous Substances and corresponding RQs: N/A

RCRA: None of the chemicals in this product are on this list.

Clean Air Act: Hazardous Air Pollutants? NO **Class 1 Ozone Depletors?** NO **Class 2 Ozone Depletors?** NO

Clean Water Act: Hazardous Substance? NO **Priority Pollutant?** NO **Toxic Pollutant?** NO

Chemical Weapons Convention: None of the chemicals in this product are on this list.

Drug Enforcement Agency (DEA) CDTA: None of the chemicals in this product are on this list.

OSHA: None of the chemicals in this product are considered Highly Hazardous by OSHA.

State Right-to-Know Lists: Titanium dioxide is found on the Right-to-Know lists of New Jersey, Pennsylvania, Minnesota, Massachusetts and Rhode Island.

California Proposition 65: Not applicable

Canadian: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.

The components in this product are listed, or exempt from listing, on the Canadian Domestic Substances List.

WHMIS Classification: D2A

Ingredient Disclosure List: No components are listed on the Canadian Ingredient Disclosure List.

Section 16: Other Information

Abbreviations and acronyms used:

ACGIH	American Conference of Governmental Industrial Hygienists	NA	not applicable, not available
ANSI	American National Standards Institute	NIOSH	National Institute for Occupational Safety and Health
atm	atmosphere (pressure unit)	ND	not determined
BOD	biological oxygen demand	NFPA	National Fire Prevention Association
CAS	Chemical Abstracts Service	NTP	National Toxicology Program
CC	closed cup	OC	open cup
CDTA	Chemical Drug and Trafficking Act	OSHA	Occupational Safety and Health Administration
COC	Cleveland Open Cup	Part	partition
COD	chemical oxygen demand	PEL	permissible exposure limits
coeff.	coefficient	ppb	parts per billion
CFR	Code of Federal Regulations	PPE	personal protective equipment
CPR	cardio-pulmonary resuscitation	ppm	parts per million
DEA	Drug Enforcement Agency	psi	pounds per square inch
DOT	Department of Transportation	RCRA	Resource Conservation and Recovery Act
FDA	Food and Drug Administration	RQ	Reportable quantity
IARC	Internat'l Agency for Research on Cancer	RTK	Right to Know
IDLH	immediate danger to life and health	SARA	Superfund Amendments and Reauthorization Act
kg	kilogram	STEL	short-term exposure limit
L	liter	TCC	Tagliabue Closed Cup
LC50	median lethal concentration	TPQ	threshold planning quantity
LD50	median lethal dose	TQ	threshold quantity
LEL	lower explosive limit	TSCA	Toxic Substances Control Act
mg	milligram	TWA	time-weighted average
mL	milliliter	UEL	upper explosive limit

This document was prepared in accordance with 29 CFR 1910.1200 and ANSI Z400.1-2004.

Prepared by Douglas R. Christo on 21 August 2009.

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