

# Safety Data Sheet

## Section 1 - Chemical Product and Company Information

Product Name: Umaco Ultra-Glaze 450 (Part A)

Manufactured by:

Umaco, Inc.

60 Rear Newhall Street

Lowell, MA 01852

(800) 442-5535

Emergency Hot Line (Chemtrec):

(800) 424-9300

## Section 2 - Hazards Identification

### GHS Ratings:

Inhalation Toxicity	2	Gases>100+<=500ppm, Vapors>0.5+<=2mg/l, Dusts&mists>0.05+<=0.5mg/l
Respiratory sensitizer	1	Respiratory sensitizer
Skin sensitizer	1	Skin sensitizer
Carcinogen	2	Limited evidence of human or animal carcinogenicity

### GHS Hazards

H317	May cause an allergic skin reaction
H330	Fatal if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H351	Suspected of causing cancer

### GHS Precautions

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P261	Avoid breathing dust/fume/gas/mist/vapours/spray
P272	Contaminated work clothing should not be allowed out of the workplace
P280	Wear protective gloves/protective clothing/eye protection/face protection
P281	Use personal protective equipment as required
P285	In case of inadequate ventilation wear respiratory protection
P321	Specific treatment (see ... on this label)
P363	Wash contaminated clothing before reuse
P302+P352	IF ON SKIN: Wash with soap and water
P304+P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P308+P313	IF exposed or concerned: Get medical advice/attention
P333+P313	If skin irritation or a rash occurs: Get medical advice/attention
P342+P311	Call a POISON CENTER or doctor/physician
P405	Store locked up
P501	Dispose of in accordance with all applicable local, state and federal regulations.

Signal Word: Danger



### Section 3 - Composition/Information on Ingredients

Chemical Name	CAS number	Weight Concentration %
HOMOPOLYMER OF HEXAMETHYLENE DIISOCYANATE	28182-81-2	90.00% - 100.00%
SOLVENT NAPHTHA	64742-95-6	0.10% - 1.00%

### Section 4 - First Aid Measures

**INHALATION** - Move the person away from the contaminated area. Fresh air and rest. Seek immediate medical advice. Show this sheet to the doctor.

**EYE CONTACT** - Immediately rinse with plenty of running water for a prolonged period, (at least 15 minutes) while keeping the eyes wide open. If irritation persists, consult a doctor. Show this sheet to the doctor.

**SKIN CONTACT** - Wash with soap and water. Wash immediately and thoroughly for a prolonged period (at least 15 minutes). In case of inflammation (redness, irritation, ...) obtain medical attention.

**INGESTION** - NEVER attempt to induce vomiting. Rinse mouth out with water. Do not give anything to drink. If necessary seek medical advice. Show this sheet to the doctor.

### Section 5 - Fire Fighting Measures

Flash Point: N/A

LEL:

UEL:

**Flammable Limits:**

**EXTINGUISHING MEDIA:**

**SUITABLE EXTINGUISHING AGENTS:** Foam, Powders, Carbon dioxide, Dry chemical

**UNSUITABLE EXTINGUISHING AGENTS:** Water

**UNUSUAL FIRE OR EXPLOSION HAZARDS:** Combustible. During combustion toxic vapors are released. Under fire conditions, corrosive fumes are emitted: oxides of nitrogen oxides of carbon. Reacts with water releasing large amounts of carbon dioxide which may cause pressure build-up in confined spaces.

**FIRE FIGHTING EQUIPMENT:** Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Stay upwind. Evacuate the personnel away from the fumes. In case of fire close by: Cool down the containers/equipment exposed to heat with a water spray. Ensure that there is NO direct contact between the water and the product.

Do not breathe fumes. Do NOT attempt to fight the fire without suitable protective equipment.

If there is a fire close by and if packaging has not been damaged: Use suitable extinguishers.

### Section 6 - Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:** Do not breathe gas. Avoid any direct contact with the product. Do NOT approach from DOWNWIND. Do NOT attempt to take action WITHOUT suitable protective equipment. Self-contained breathing apparatus. Wear fully protective suit. Keep people at a distance and stay upwind. Mark out the contaminated area with signs and prevent access to unauthorized personnel.

**Methods and material for containment and cleaning up:** Pump up the product into a spare container suitably labelled. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders). Wash contaminated area with large amounts of water. Recover the cleaning water for subsequent disposal. Dispose contaminated material as waste according to item 13.

Do not flush to drain. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

**Environmental precautions:** Contain the spilled material by binding. Do not allow to enter sewers/ surface or ground water.

## Section 7 - Handling and Storage

**Precautions for safe handling:** Ensure good ventilation/aspiration at the workplace. Avoid contact with water or humidity. Avoid any direct contact with the product. Any measure to eliminate exposure should be considered.

**Conditions for safe storage, including any incompatibilities:** The floor of the depot should be impermeable and designed to form a water-tight basin. Store in cool, dry conditions in well sealed receptacles. Store receptacle in a well ventilated area. Store away from incompatible materials.

**Requirements to be met by storerooms and receptacles:** Suitable material for receptacle and pipe: epoxy-coated steel. Unsuitable material for receptacle: Polystyrene. Store only in unopened original receptacles, metallic drums, storage tank with a dry nitrogen blanket. Packaging materials recommended: aluminium, steel.

Unsuitable material for receptacle: Copper or Tin

## Section 8 - Exposure Controls / Personal Protection

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
HOMOPOLYMER OF HEXAMETHYLENE DIISOCYANATE 28182-81-2	Not Established	Not Established	Not Established
SOLVENT NAPHTHA 64742-95-6	Not Established	Not Established	Not Established

## Section 9 - Physical and Chemical Properties

This mixture typically exhibits the following properties under normal circumstance:

<p style="text-align: center;"><b>Appearance:</b> Liquid</p> <p style="text-align: center;"><b>Vapor Pressure:</b> N/A</p> <p style="text-align: center;"><b>Vapor Density:</b> N/A</p> <p style="text-align: center;"><b>Density:</b> 1.13 kg/L</p> <p style="text-align: center;"><b>Freezing point:</b> N/A</p> <p style="text-align: center;"><b>Boiling range:</b> N/A</p> <p style="text-align: center;"><b>Evaporation rate:</b> N/A</p> <p style="text-align: center;"><b>Explosive Limits:</b> N/A</p> <p style="text-align: center;"><b>Autoignition temperature:</b> N/A</p> <p style="text-align: center;"><b>Viscosity:</b> 710 cps</p>	<p style="text-align: center;"><b>Odor:</b> N/A</p> <p style="text-align: center;"><b>Odor threshold:</b> N/A</p> <p style="text-align: center;"><b>pH:</b> N/A</p> <p style="text-align: center;"><b>Melting point:</b> N/A</p> <p style="text-align: center;"><b>Solubility:</b> N/A</p> <p style="text-align: center;"><b>Flash point:</b> 200°f</p> <p style="text-align: center;"><b>Flammability:</b> N/A</p> <p style="text-align: center;"><b>Partition coefficient (n- N/A octanol/water):</b></p> <p style="text-align: center;"><b>Decomposition temperature:</b> N/A</p> <p style="text-align: center;"><b>Grams VOC less water:</b> 9.19 g/L</p>
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## Section 10 - Stability and Reactivity

**Stability:**

STABLE

**Incompatibilities/Conditions to avoid:** extreme heat, open flame, moisture, ignition sources.**Hazardous decomposition products:** On thermal decomposition (pyrolysis) releases: Toxic gases, Carbon dioxide, Nitrogen oxides, Oxides of carbon.**Possibility of hazardous reactions:** alcohols, amines, bases, protic solvents, water and aqueous solutions. With a great release of CO<sub>2</sub>, and hence a risk of a pressure build-up in confined areas, and forms an insoluble solid precipitate. Reacts with strong acids. Reacts with strong oxidizing agents.

Hazardous polymerization will not occur.

**Section 11 - Toxicological Information****Mixture Toxicity**

Oral Toxicity LD50: 2,532mg/kg

Inhalation Toxicity LC50: 1mg/L

**Component Toxicity**

28182-81-2	HOMOPOLYMER OF HEXAMETHYLENE DIISOCYANATE Oral LD50: 2,500 mg/kg (Rat (female)) Inhalation LC50: 1 mg/L (Rat (male))
64742-95-6	SOLVENT NAPHTHA Oral LD50: 3,492 mg/kg (Rat) Dermal LD50: 3,160 mg/kg (Rabbit)

**Primary routes of entry:****Carcinogenicity:** Not considered to be carcinogen.

<u>CAS Number</u>	<u>Description</u>	<u>% Weight</u>	<u>Carcinogen Rating</u>
64742-95-6	SOLVENT NAPHTHA	1% - 1.0%	SOLVENT NAPHTHA:

**Section 12 - Ecological Information****Component Ecotoxicity**

SOLVENT NAPHTHA

Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

Expected to be readily biodegradable.

Transformation due to hydrolysis not expected to be significant

Transformation due to photolysis not expected to be significant

Expected to degrade rapidly in air.

**Section 13 - Disposal Considerations**

Dispose in accordance with all applicable regulations.

**Section 14 - Transport Information**

<u>Agency</u>	<u>Proper Shipping Name</u>	<u>UN Number</u>	<u>Packing Group</u>	<u>Hazard Class</u>
ADR/RID	Not regulated			
DOT	Not regulated			
IATA	Not regulated			
IMDG	Not regulated			

## Section 15 - Regulatory Information

**State of California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): WARNING!**

This product contains the following chemicals which are listed by the State of California as carcinogenic or a reproductive toxin:

- None

**R2K List**

28182-81-2 HOMOPOLYMER OF HEXAMETHYLENE DIISOCYANATE

## Section 16 - Other Information

The material contained in this Safety Data Sheet is based on information supplied to Umaco, Inc. by the raw material suppliers of the individual components of this product. Umaco, Inc. believes this information is truthful and reliable. However, no warranty is expressed or implied regarding the accuracy of this information, or of any product, method or apparatus mentioned and you must make your own determination of its suitability and completeness for your own use, for the protection of the environment, and health and safety of your employees and users of this material. As more information becomes available from our vendors additional revisions will be forthcoming.

Date Prepared: 7/25/2018

# Safety Data Sheet

## Section 1 - Chemical Product and Company Information

Product Name: Umaco Ultra-Glaze 450 (Part B)

Manufactured by:  
Umaco, Inc.  
60 Rear Newhall Street  
Lowell, MA 01852  
(800) 442-5535

Emergency Hot Line (Chemtrec):  
(800) 424-9300

## Section 2 - Hazards Identification

### GHS Ratings:

Skin corrosive	3	Reversible adverse effects in dermal tissue, Draize score: $\geq 1.5 < 2.3$
Eye corrosive	2A	Eye irritant: Subcategory 2A, Reversible in 21 days
Mutagen	2	Suspected/Possible: May include heritable mutations in human germ cells, Positive evidence from tests in mammals and somatic cell tests, In vivo somatic genotoxicity supported by in vitro mutagenicity
Reproductive toxin	1B	Presumed, Based on experimental animals

### GHS Hazards

H316	Causes mild skin irritation
H319	Causes serious eye irritation
H341	Suspected of causing genetic defects
H360	May damage fertility or the unborn child

### GHS Precautions

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P264	Wash ... thoroughly after handling
P280	Wear protective gloves/protective clothing/eye protection/face protection
P281	Use personal protective equipment as required
P305+P351+P338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
P308+P313	IF exposed or concerned: Get medical advice/attention
P332+P313	If skin irritation occurs: Get medical advice/attention
P337+P313	If eye irritation persists, get medical advice/attention
P405	Store locked up
P501	Dispose of in accordance with all applicable local, state and federal regulations.

**Signal Word: Danger**



### Section 3 - Composition/Information on Ingredients

Chemical Name	CAS number	Weight Concentration %
	Inert	30.00% - 40.00%
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	77-58-7	1.00% - 5.00%

### Section 4 - First Aid Measures

**INHALATION** - Move to fresh air. Consult a physician after significant exposure.

**EYE CONTACT** - Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses.

Keep eye wide open while rinsing.

**SKIN CONTACT** - Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. If symptoms persist, call a physician.

**INGESTION** - Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Obtain medical attention.

**Notes to Physician** - Treat symptomatically.

### Section 5 - Fire Fighting Measures

Flash Point: N/A

LEL: 2.00

UEL: 33.00

**SUITABLE EXTINGUISHING AGENTS:** Carbon dioxide (CO<sub>2</sub>)

**UNSUITABLE EXTINGUISHING AGENTS:** Water

**Specific extinguishing methods** - Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

**Special protective equipment for fire-fighters** - In the event of fire, wear self-contained breathing apparatus.

### Section 6 - Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures** - Use personal protective equipment.

Deny access to unprotected persons.

**Methods and materials for containment and cleaning up** - Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

**Environmental precautions** - Do not flush into surface water or sanitary sewer system. Local authorities should be advised if significant spillages cannot be contained.

## Section 7 - Handling and Storage

**Advice on safe handling** - Do not breathe vapors or spray mist. Avoid exceeding the given occupational exposure limits (see section 8). Do not get in eyes, on skin, or on clothing.

For personal protection see section 8. Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used. Smoking, eating and drinking should be prohibited in the application area. Follow standard hygiene measures when handling chemical products.

**Conditions for safe storage** - Store in original container. Keep in a well-ventilated place.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Observe label precautions. Store in accordance with local regulations.

## Section 8 - Exposure Controls / Personal Protection

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Inert	Not Established	Not Established	Not Established
Dodecanoic acid, 1,1'- (dibutylstannylene) ester 77-58-7	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.	Not Established	Not Established

## Section 9 - Physical and Chemical Properties

This mixture typically exhibits the following properties under normal circumstance:

<p style="text-align: center;"><b>Explosive Limits:</b> N/A</p> <p style="text-align: center;"><b>Autoignition temperature:</b> N/A</p> <p style="text-align: center;"><b>Viscosity:</b> 4 cps</p> <p style="text-align: center;"><b>Appearance:</b> Liquid</p> <p style="text-align: center;"><b>Vapor Pressure:</b> N/A</p> <p style="text-align: center;"><b>Vapor Density:</b> N/A</p> <p style="text-align: center;"><b>Density:</b> 1.11 kg/L</p> <p style="text-align: center;"><b>Freezing point:</b> N/A</p> <p style="text-align: center;"><b>Boiling range:</b> N/A</p> <p style="text-align: center;"><b>Evaporation rate:</b> N/A</p>	<p style="text-align: center;"><b>Partition coefficient (n- N/A octanol/water):</b></p> <p style="text-align: center;"><b>Decomposition temperature:</b> N/A</p> <p style="text-align: center;"><b>Grams VOC less water:</b> 439.93 g/L</p> <p style="text-align: center;"><b>Odor:</b> N/A</p> <p style="text-align: center;"><b>Odor threshold:</b> N/A</p> <p style="text-align: center;"><b>pH:</b> N/A</p> <p style="text-align: center;"><b>Melting point:</b> N/A</p> <p style="text-align: center;"><b>Solubility:</b> N/A</p> <p style="text-align: center;"><b>Flash point:</b> 200°F</p> <p style="text-align: center;"><b>Flammability:</b> N/A</p>
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## Section 10 - Stability and Reactivity

**Stability:**

STABLE

**Incompatibilities/Conditions to avoid:** No data available.

Hazardous polymerization will not occur.



## Section 11 - Toxicological Information

### Mixture Toxicity

#### Component Toxicity

77-58-7

Dodecanoic acid, 1,1'-(dibutylstannylene) ester

Oral LD50: 2,071 mg/kg (Rat) Dermal LD50: 2,000 mg/kg (Rat)

CAS Number

Description

% Weight

Carcinogen Rating

None

No Data Available

## Section 12 - Ecological Information

### Component Ecotoxicity

Dodecanoic acid, 1,1'-  
(dibutylstannylene) ester

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Persistence and degradability No data is available on the degradability of this product.

## Section 13 - Disposal Considerations

Dispose in accordance with all applicable regulations.

## Section 14 - Transport Information

Agency      Proper Shipping Name

ADR/RID      Not regulated

DOT      Not regulated

IATA      Not regulated

IMDG      Not regulated

UN Number

Packing Group

Hazard Class

## Section 15 - Regulatory Information

**State of California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):** WARNING!

This product contains the following chemicals which are listed by the State of California as carcinogenic or a reproductive toxin:

- None

### R2K List

77-58-7 Dodecanoic acid, 1,1'-(dibutylstannylene) ester

## Section 16 - Other Information

The material contained in this Safety Data Sheet is based on information supplied to Umaco, Inc. by the raw material suppliers of the individual components of this product. Umaco, Inc. believes this information is truthful and reliable. However, no warranty is expressed or implied regarding the accuracy of this information, or of any product, method or apparatus mentioned and you must make your own determination of its suitability and completeness for your own use, for the protection of the environment, and health and safety of your employees and users of this material. As more information becomes available from our vendors additional revisions will be forthcoming.

Date Prepared: 7/25/2018

# Safety Data Sheet

## Section 1 - Chemical Product and Company Information

Product Name: Umaco Ultra-Glaze 450 (Part C)

Manufactured by:  
Umaco, Inc.  
60 Rear Newhall Street  
Lowell, MA 01852  
(800) 442-5535

Emergency Hot Line(Chemtrec):  
(800) 424-9300

## Section 2 - Hazards Identification

### GHS Ratings:

Carcinogen 2 Limited evidence of human or animal carcinogenicity

### GHS Hazards

H351 Suspected of causing cancer

### GHS Precautions

P201 Obtain special instructions before use  
P202 Do not handle until all safety precautions have been read and understood  
P281 Use personal protective equipment as required  
P308+P313 IF exposed or concerned: Get medical attention/advice  
P405 Store locked up  
P501 Dispose of in accordance with all applicable local, state and federal regulations.

Signal Word: Warning



## Section 3 - Composition/Information on Ingredients

Chemical Name	CAS number	Weight Concentration %
Aluminum Oxide	1344-28-1	30.00% - 60.00%
CALCIUM SODIUM BOROSILICATE	65997-17-3	30.00% - 60.00%
TITANIUM DIOXIDE	13463-67-7	0.60%

## Section 4 - First Aid Measures

### First Aid

**Eyes:** Wash immediately with plenty of water. Do not rub eyes. If irritation persists, seek medical attention.

**Skin:** First aid is not required.

**Ingestion:** If large amounts are swallowed, get immediate medical attention.

**Inhalation:** First aid is not generally required. If irritation develops from breathing dust, move the person from the overexposure and seek medical attention if needed.

**See Section 11 for more detailed information on health effects.**

**Most important symptoms and effects, both acute and delayed:** Particulates may cause abrasive eye injury. Inhalation of dust may cause respiratory tract irritation. Symptoms of exposure may include cough, sore throat, nasal congestion, sneezing, wheezing and shortness of breath. Prolonged inhalation of respirable crystalline silica above certain concentrations may cause lung diseases, including silicosis and lung cancer.

**Indication of any immediate medical attention and special treatment needed:** Immediate medical attention is not required.

## Section 5 - Fire Fighting Measures

Flash Point: N/A

LEL:

UEL:

**Extinguishing Media:** Use extinguishing media appropriate for surrounding fire.

**Special Hazards Arising from the Substance or Mixture:** Product is not flammable, combustible or explosive.

**Advice for Fire-Fighters:** None required.

## Section 6 - Accidental Release Measures

**Personal Precautions, Protective Equipment and Emergency Procedures:** Wear appropriate protective clothing and respiratory protection. Avoid generating airborne dust during clean-up.

**Environmental Precautions:** No specific precautions. Report releases to regulatory authorities as required by local, state and federal regulations.

**Methods and Material for Containment and Cleaning Up:** Avoid dry sweeping. Do not use compressed air to clean spilled sand or ground silica. Use water spraying/flushing or ventilated or HEPA filtered vacuum cleaning system, or wet before sweeping. Dispose of in closed containers.

**Reference to Other Sections:** Refer to Section 13 for disposal information and Section 8 for protective equipment.

## Section 7 - Handling and Storage

**Precautions for Safe Handling:** Do not generate dust. Do not breathe dust. Do not rely on your sight to determine if dust is in the air. Respirable crystalline silica dust may be in the air without a visible dust cloud. Use adequate exhaust ventilation and dust collection. Maintain and test ventilation and dust collection to reduce respirable crystalline silica dust levels to below the occupational exposure limit. Use all available work practices to control dust exposures, such as water sprays. Practice good housekeeping. Do not permit dust to collect on walls, floors, sills, ledges, machinery, or equipment. Keep airborne dust concentrations below permissible exposure limits.

Where necessary to reduce exposures below the applicable exposure limit, wear a respirator approved for silica containing dust when using, handling, storing or disposing of this product or bag. See Section 8, for further information

on respirators. Do not alter the respirator. Do not wear a tight-fitting respirator with facial hair such as a beard or mustache that prevents a good face to face piece seal between the respirator and face. Maintain, clean, and fit test respirators in accordance with applicable standards. Wash or vacuum clothing that has become dusty.

Participate in training, exposure monitoring, and health surveillance programs to monitor any potential adverse health effects that may be caused by breathing respirable crystalline silica. All applicable national and local worker or community "right-to-know" laws and regulations should be strictly followed.

**Conditions for Safe Storage, Including any Incompatibilities:** Use dust collection to trap dust produced during loading and unloading. Keep containers closed and store bags to avoid accidental tearing, breaking, or bursting.

**Specific end use(s):**

Industrial uses: Various commercial and industrial applications.

Professional uses: Various commercial and industrial applications.

Section 8 - Exposure Controls / Personal Protection			
Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Aluminum Oxide 1344-28-1	Not Established	Not Established	Not Established
CALCIUM SODIUM BOROSILICATE 65997-17-3	Not Established	Not Established	Not Established
TITANIUM DIOXIDE 13463-67-7	15 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	Not Established

**Control Parameters:**

If crystalline silica (quartz) is heated to more than 870°C, quartz can change to a form of crystalline silica known as tridymite; if crystalline silica (quartz) is heated to more than 1470°C, quartz can change to a form of crystalline silica known as cristobalite. In some countries, the exposure limits for crystalline silica as tridymite or cristobalite is different than the exposure limit for crystalline silica (quartz).

**Exposure Controls:**

**Recommended Monitoring Procedures:** Collection on filters and analysis by x-ray diffraction. Size selective sampling is recommended.

**Appropriate engineering controls:** Use adequate general or local exhaust ventilation to maintain concentrations in the workplace below the applicable exposure limits listed above.

**Personal Protective Measures**

**Respiratory Protection:** If it is not possible to reduce airborne exposure levels to below the applicable limit with ventilation, follow local regulations to assist you in selecting respirators that will reduce personal exposures to below the limits. Refer to EN 529 or member state-specific guidance on use and selection of respiratory protection.

**Eye Protection:** Safety glasses with side shields or goggles recommended if eye contact is anticipated (EN 166)

**Skin Protection:** Maintain good industrial hygiene. Protection recommended for workers suffering from dermatitis or sensitive skin.

**Other Protection:** None known.

<b>Section 9 - Physical and Chemical Properties</b>
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This mixture typically exhibits the following properties under normal circumstance:

<b>Appearance:</b> White Powder <b>pH:</b> 6-8 <b>Melting point:</b> 3110°F/1710°C	<b>Odor:</b> None <b>Density:</b> 26.76 lb/gal <b>Solubility:</b> Insoluble in water
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**Boiling range:** 4046°F/2230°C

**Flammability:** Not Applicable

**Flash point:** Not Applicable

**%VOC** 0.00%

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable.

**Possibility of Hazardous Reactions:** Reacts strong acids, reacts with oxidizing agents, reacts with strong alkali.

**Conditions to Avoid:** Avoid generation of dust in handling and use.

**Incompatible Materials:** No further relevant information available.

**Hazardous Decomposition Products:** Toxic metal oxide smoke.

STABLE

Hazardous polymerization will not occur.

## Section 11 - Toxicological Information

### Mixture Toxicity

Inhalation Toxicity LC50: 1,138mg/L

### Acute toxicity:

#### Primary irritant effect:

**on the skin:** No irritant effect.

**on the eye:** Slight irritant effect on eyes

**Sensitization:** No sensitizing effects known

**Repeated dose toxicity:** May Cause damage to organs through prolonged or repeated exposure.

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):** Based on IARC classifications and not the CLP classification.

Carc.2

## Section 12 - Ecological Information

**Aquatic toxicity:** Generally not hazardous for water

**Persistence and degradability:** Inorganic product is not eliminable from water by means of biological cleaning processes.

**Bioaccumulative potential:** Does not accumulate in organisms.

**Mobility in soil:** No further relevant information available.

### Results of PBT and vPvB assessment

**PBT:** Not applicable

**vPvB:** Not applicable.

**Other adverse effects:** No further relevant information available.

### Component Ecotoxicity

TITANIUM DIOXIDE

#### Ecotoxicity:

Fish: LC 50 - fathead minnow - > 1,000 mg/l - 96h

Invertebrates: EC 50 - Daphnia magna (water flea) - > 1,000 mg/l - 48h

#### Persistence and degradability:

Readily degradable in the environment.

Bioaccumulative potential: No additional information.

Mobility in soil: No additional information.

Other adverse effects: No additional information.

## Section 13 - Disposal Considerations

### Waste treatment methods

#### Recommendation

Smaller quantities can be disposed of with household waste. Can be reused after reprocessing. Contact waste processors for recycling information.

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous waste. Residual materials should be treated as hazardous.

#### Uncleaned packaging:

**Recommendation:** Disposal must be made according to official regulations.

## Section 14 - Transport Information

<u>Agency</u>	<u>Proper Shipping Name</u>	<u>UN Number</u>	<u>Packing Group</u>	<u>Hazard Class</u>
DOT		Not Regulated		
ADR		Not Regulated		
ADN		Not Regulated		
IMDG		Not Regulated		
IATA		Not Regulated		

## Section 15 - Regulatory Information

**Safety, health and environmental regulations/legislation specific for the substance of mixture United States (USA)**

#### SARA

**Section 355 (extremely hazardous substances):** Substance is not listed

**Section 313 (specific toxic chemical listings):** Substance is not listed

**TSCA (toxic substances control act):** Substance is not listed

#### Proposition 65 (California)

**Chemicals known to cause cancer:** 13463-67-7 titanium dioxide

**Chemicals known to cause reproductive toxicity for females:** Substance is not listed

**Chemicals known to cause reproductive toxicity for males:** Substance is not listed

**Chemicals known to cause developmental toxicity:** Substance is not listed

#### Carcinogenic Categories

**EPA (Environmental Protection Agency):** Substance is not listed

**IARC (International Agency for Research on Cancer):** 2B 13463-67-7 titanium dioxide

**TLV (Threshold limit Value established by ACGIH):** A4 13463-67-7 titanium dioxide

**NIOSH-Ca (National Institute for Occupational Safety and Health):** 13463-67-7 titanium dioxide

#### Canada

**Canadian Domestic Substances List (DSL):** Substance is not listed

**Canadian Ingredient Disclosure list (limit 0.1%):** Substance is not listed

**Canadian Ingredient Disclosure list (limit 1%):** Substance is not listed

**State of California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):** WARNING!

This product contains the following chemicals which are listed by the State of California as carcinogenic or a reproductive toxin:

13463-67-7 TITANIUM DIOXIDE Carcinogen

#### **R2K List**

1344-28-1 Aluminum Oxide

13463-67-7 TITANIUM DIOXIDE

## Section 16 - Other Information

The material contained in this Safety Data Sheet is based on information supplied to Umaco, Inc. by the raw material suppliers of the individual components of this product. Umaco, Inc. believes this information is truthful and reliable. However, no warranty is expressed or implied regarding the accuracy of this information, or of any product, method or apparatus mentioned and you must make your own determination of its suitability and completeness for your own use, for the protection of the environment, and health and safety of your employees and users of this material. As more information becomes available from our vendors additional revisions will be forthcoming.

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