KIT - SAFETY DATA SHEET

Product identifier used on the label:

Kit Name **DEVCON® Titanium Putty**

Stock No.: 10760

Other means of identification:

Recommended use of the chemical and restrictions on use:

Chemical manufacturer address and telephone number:

Manufacturer Name: ITW Polymers Adhesives, North America

Address: 30 Endicott Street
Danvers, MA 01923

Component list	
Component A	TITANIUM PUTTY RESIN
Component B	TITANIUM PUTTY HARDENER
Kit SDS Revision Date	07/30/2015

Component A - SDS

SECTION 1 : IDENTIFICATION

Product identifier used on the label:

Product Name: **TITANIUM PUTTY RESIN**

Other means of identification:

Synonyms: None.

Recommended use of the chemical and restrictions on use:

Product Use/Restriction: Not applicable.

Chemical manufacturer address and telephone number:

Manufacturer Name: ITW

Address: 30 Endicott Street
Danvers, MA 01923

General Phone Number: (978) 777-1100

Emergency phone number:

Emergency Phone Number: (800) 424-9300

CHEMTREC: For emergencies in the US, call CHEMTREC: 800-424-9300

SECTION 2 : HAZARD(S) IDENTIFICATION

Classification of the chemical in accordance with CFR 1910.1200(d)(f):

GHS Pictograms:

Signal Word: WARNING.

GHS Class:
Eye Irritation. Category 2.
Skin Irritation. Category 2.
Skin Sensitization. category 1.
Acute Oral Toxicity. Category 4.
Specific Target Organ Toxicity - STOT, Single Exposure SE. Category 3.

Hazard Statements:
H319 - Causes serious eye irritation.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H302 - Harmful if swallowed.
H335 - May cause respiratory irritation.

Precautionary Statements:
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P302+P352 - IF ON SKIN: Wash with plenty of water.
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
P321 - P330 - Rinse mouth.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with Local, State, Federal and Provincial regulations.

Hazards not otherwise classified that have been identified during the classification process:

Route of Exposure:	Eyes. Skin. Inhalation. Ingestion.
Potential Health Effects:	
Eye:	Can cause moderate irritation, burning sensation, tearing, redness, and swelling. Overexposure may cause lacrimation, conjunctivitis, corneal damage and permanent injury.
Skin:	Can cause skin irritation; itching, redness, rashes, hives, burning, and swelling. Allergic reactions are possible. May cause skin sensitization, an allergic reaction, which becomes evident on reexposure to this material.
Inhalation:	Respiratory tract irritant. High concentration may cause dizziness, headache, and anesthetic effects.
Ingestion:	Causes irritation, a burning sensation of the mouth, throat and gastrointestinal tract and abdominal pain.
Chronic Health Effects:	Prolonged skin contact may lead to burning associated with severe reddening, swelling, and possible tissue destruction.
Signs/Symptoms:	Overexposure can cause headaches, dizziness, nausea, and vomiting.
Target Organs:	Eyes. Skin. Respiratory system. Digestive system.
Aggravation of Pre-Existing Conditions:	Individuals with pre-existing skin disorders, asthma, allergies or known sensitization may be more susceptible to the effects of this product.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures:

Chemical Name	CAS#	Ingredient Percent	EC Num.
Silicon	7440-21-3	1 - 10 by weight	
Crystalline silica	14808-60-7	1 - 10 by weight	
Iron	7439-89-6	40 - 50 by weight	
Bisphenol A diglycidyl ether resin	25068-38-6	20 - 30 by weight	
Titanium	7440-32-6	1 - 10 by weight	
Amorphous silicon dioxide	67762-90-7	1 - 10 by weight	
Aluminum flake	7429-90-5	1 - 10 by weight	

SECTION 4 : FIRST AID MEASURES

Description of necessary measures:

Eye Contact:	Immediately flush eyes with plenty of water for at least 15 to 20 minutes. Ensure adequate flushing of the eyes by separating the eyelids with fingers. Get immediate medical attention.
Skin Contact:	Immediately wash skin with plenty of soap and water for 15 to 20 minutes, while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists.
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.
Ingestion:	If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

SECTION 5 : FIRE FIGHTING MEASURES

Suitable and unsuitable extinguishing media:

Suitable Extinguishing Media:	Use carbon dioxide (CO2) or dry chemical when fighting fires involving this material.
Unsuitable extinguishing media:	Water or foam may cause frothing.
Unusual Fire Hazards:	Sealed containers at elevated temperatures may rupture explosively and spread fire due to polymerization. Heating above 300 deg F in the presence of air may cause slow oxidative

decomposition and above 500 deg F may cause polymerization.

Special protective equipment and precautions for fire-fighters:

Protective Equipment:	As in any fire, wear Self-Contained Breathing Apparatus (SCBA), MSHA/NIOSH (approved or equivalent) and full protective gear.
Fire Fighting Instructions:	Evacuate area of unprotected personnel. Use cold water spray to cool fire exposed containers to minimize risk of rupture. Do not enter confined fire space without full protective gear. If possible, contain fire run-off water.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Personal Precautions:	Evacuate area and keep unnecessary and unprotected personnel from entering the spill area.

Environmental precautions:

Environmental Precautions:	Avoid runoff into storm sewers, ditches, and waterways.

Methods and materials for containment and cleaning up:

Spill Cleanup Measures:	Absorb spill with inert material (e,g., dry sand or earth), then place in a chemical waste container. Provide ventilation. Clean up spills immediately observing precautions in the protective equipment section. After removal, flush spill area with soap and water to remove trace residue. Avoid personal contact and breathing vapors or mists. Ventilate area. Use proper personal protective equipment as listed in Section 8.

Reference to other sections:

Other Precautions:	Pump or shovel to storage/salvage vessels.

SECTION 7 : HANDLING and STORAGE

Precautions for safe handling:

Handling:	Use with adequate ventilation. Avoid breathing vapor, aerosol or mist.
Hygiene Practices:	Wash thoroughly after handling.
Special Handling Procedures:	Provide appropriate ventilation/respiratory protection against decomposition products (see Section 10) during welding/flame cutting operations and to protect against dust during sanding/grinding of cured product.

Conditions for safe storage, including any incompatibilities:

Storage:	Store in a cool, dry, well ventilated area away from sources of heat and incompatible materials. Keep container tightly closed when not in use.

SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE GUIDELINES:

Silicon :

Guideline OSHA:	PEL-TWA: 15 mg/m3 Total particulate/dust (T) PEL-TWA: 5 mg/m3 Respirable fraction (R)

Crystalline silica :

Guideline ACGIH:	TLV-TWA: 0.025 mg/m3 (R)

Aluminum flake :

Guideline ACGIH:	TLV-TWA: 1 mg/m3 Respirable fraction (R) TLV-TWA: 1 mg/m3 Respirable fraction (R) TLV-TWA: 1 mg/m3 (R)
Guideline OSHA:	PEL-TWA: 15 mg/m3 Total particulate/dust (T) PEL-TWA: 5 mg/m3 Respirable fraction (R)

Appropriate engineering controls:

Engineering Controls:	Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Good general ventilation should be sufficient to control airborne levels. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.

Individual protection measures:

Eye/Face Protection:	Wear appropriate protective glasses or splash goggles as described by 29 CFR 1910.133, OSHA eye and face protection regulation, or the European standard EN 166.
Skin Protection Description:	Wear appropriate protective gloves and other protective apparel to prevent skin contact. Consult manufacturer's data for permeability data.
Respiratory Protection:	A NIOSH approved air-purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.
Other Protective:	Facilities storing or utilizing this material should be equipped with an eyewash and a deluge shower safety station.
Notes :	Only established PEL and TLV values for the ingredients are listed.

SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL AND CHEMICAL PROPERTIES:

Physical State Appearance:	Viscous. Liquid.
Odor:	Slight. odor.
Boiling Point:	>500°F (260°C)
Melting Point:	Not determined.
Specific Gravity:	2.5
Solubility:	negligible.
Vapor Density:	>1 (air = 1)
Vapor Pressure:	0.03 mmHg @171°F
Percent Volatile:	0
Evaporation Rate:	<<1 (butyl acetate = 1)
pH:	Neutral.
Molecular Formula:	Mixture
Molecular Weight:	Mixture
Flash Point:	>400°F (204.4°C)
Flash Point Method:	Pensky-Martens Closed Cup
Lower Flammable/Explosive Limit:	Not determined.
Upper Flammable/Explosive Limit:	Not determined.
Auto Ignition Temperature:	Not determined.
VOC Content:	0 g/L

9.2. Other information:

Percent Solids by Weight	100

SECTION 10 : STABILITY and REACTIVITY

Chemical Stability:

Chemical Stability:	Stable under normal temperatures and pressures.

Possibility of hazardous reactions:

Hazardous Polymerization:	Not reported.

Conditions To Avoid:

Conditions to Avoid:	Extreme heat, sparks, and open flame. Incompatible materials, oxidizers and oxidizing conditions. Heating resin above 300 F in the presence of air may cause slow oxidative decomposition.

Incompatible Materials:

Incompatible Materials:	Strong Lewis or mineral acids, strong oxidizing agents, strong mineral and organic bases (especially primary and secondary aliphatic amines).

SECTION 11 : TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:

Silicon :

Eye:	Administration into the eye - Rabbit Standard Draize test: 3 mg [Mild] (RTECS)
Ingestion:	Oral - Rat LD50 - Lethal dose, 50 percent kill: 3160 mg/kg [Details of toxic effects not reported other than lethal dose value] (RTECS)

Crystalline silica :

Chronic Effects:	Long term exposure to crystalline silica may cause silicosis or lung cancer. Although normal application procedures for this product pose minimal hazard as to the release of crystalline silica dust, grinding or sanding cured product may generate some respirable crystalline silica.
Carcinogenicity:	Crystalline silica in the form of quartz or cristobalite dust causes cancer of the lung.

Iron :

Ingestion:	Oral - Rat LD50 - Lethal dose, 50 percent kill: 30 gm/kg [Nutritional and Gross Metabolic - Weight loss or decreased weight gain] Oral - Rat LD50 - Lethal dose, 50 percent kill: 750 mg/kg [Blood - Changes in serum composition (e.g., TP, bilirubin, cholesterol) Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - Transaminases] (RTECS)

Bisphenol A diglycidyl ether resin :

Eye:	Administration into the eye - Rabbit Standard Draize test: 100 mg [Mild] Administration into the eye - Rabbit Standard Draize test: 20 mg/24H [Moderate] Administration into the eye - Rabbit Standard Draize test: 5 mg/24H [Severe] (RTECS)
Skin:	Administration onto the skin - Rabbit LD50 - Lethal dose, 50 percent kill: >20 mL/kg [Details of toxic effects not reported other than lethal dose value]

	Administration onto the skin - Rat LD50 - Lethal dose, 50 percent kill: >1200 mg/kg [Details of toxic effects not reported other than lethal dose value] (RTECS)
Ingestion:	Oral - Rat LD50 - Lethal dose, 50 percent kill: 10700 uL/kg [Details of toxic effects not reported other than lethal dose value] Oral - Rat LD50 - Lethal dose, 50 percent kill: 13600 mg/kg [Behavioral - Somnolence (general depressed activity) Lungs, Thorax, or Respiration - Dyspnea Nutritional and Gross Metabolic - Weight loss or decreased weight gain] Oral - Rat LD50 - Lethal dose, 50 percent kill: 13.6 gm/kg [Details of toxic effects not reported other than lethal dose value] Oral - Rat LD50 - Lethal dose, 50 percent kill: 11.4 gm/kg [Details of toxic effects not reported other than lethal dose value] Oral - Rat LD50 - Lethal dose, 50 percent kill: 30 gm/kg [Behavioral - Somnolence (general depressed activity) Lungs, Thorax, or Respiration - Dyspnea Nutritional and Gross Metabolic - Weight loss or decreased weight gain] Oral - Rat LD50 - Lethal dose, 50 percent kill: 30 gm/kg [Details of toxic effects not reported other than lethal dose value] Oral - Rat LD50 - Lethal dose, 50 percent kill: >1 gm/kg [Details of toxic effects not reported other than lethal dose value] Oral - Rat LD50 - Lethal dose, 50 percent kill: 11400 mg/kg [Behavioral - Somnolence (general depressed activity) Lungs, Thorax, or Respiration - Dyspnea Nutritional and Gross Metabolic (RTECS)

SECTION 12 : ECOLOGICAL INFORMATION

Ecotoxicity:

Ecotoxicity:	No ecotoxicity data was found for the product.
Environmental Fate:	No environmental information found for this product.

SECTION 13 : DISPOSAL CONSIDERATIONS

Description of waste:

Waste Disposal:	Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and/or state and local guidelines.
RCRA Number:	Not determined.

SECTION 14 : TRANSPORT INFORMATION

DOT Shipping Name:	Refer to Bill of Lading
DOT UN Number:	Refer to Bill of Lading
IATA Shipping Name:	Refer to Bill of Lading
IATA UN Number:	Refer to Bill of Lading
IMDG UN Number :	Refer to Bill of Lading
IMDG Shipping Name :	Refer to Bill of Lading

SECTION 15 : REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product:

Silicon :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Crystalline silica :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Iron :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Bisphenol A diglycidyl ether resin :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Titanium :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Amorphous silicon dioxide :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Aluminum flake :

TSCA Inventory Status:	Listed
Section 313:	EPCRA - 40 CFR Part 372 - (SARA Title III) Section 313 Listed Chemical.
Canada DSL:	Listed
Canadian Regulations.	WHMIS Hazard Class(es): D2B All components of this product are on the Canadian Domestic Substances List.
WHMIS Pictograms:	

SECTION 16 : ADDITIONAL INFORMATION

HMIS Ratings:

HMIS Health Hazard:	2*
HMIS Fire Hazard:	1
HMIS Reactivity:	1
HMIS Personal Protection:	X

Health Hazard	2*
Fire Hazard	1
Reactivity	1
Personal Protection	X

* Chronic Health Effects

SDS Revision Date:	May 19, 2015
SDS Revision Notes:	GHS Update
SDS Format:	In accordance to OSHA GHS 1910.1200
SDS Author:	Actio Corporation
Disclaimer:	The information in this Safety Data Sheet (SDS) is believed to be correct as of the date issued. ITW Polymers Adhesives, NA, MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the ITW Polymers Adhesives, NA product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a ITW Polymers Adhesives, NA product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the ITW Polymers Adhesives, NA product to determine whether it is fit for a particular purpose and suitable for user's method of use or application. ITW Polymers Adhesives, NA provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, ITW Polymers Adhesives, NA makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from ITW Polymers Adhesives, NA

Component B - SDS

SECTION 1 : IDENTIFICATION

Product identifier used on the label:

Product Name:	**TITANIUM PUTTY HARDENER**

Other means of identification:

Synonyms:	None.

Recommended use of the chemical and restrictions on use:

Product Use/Restriction:	Not applicable.

Chemical manufacturer address and telephone number:

Manufacturer Name:	ITW
Address:	30 Endicott Street Danvers, MA 01923
General Phone Number:	(978) 777-1100

Emergency phone number:

Emergency Phone Number:	(800) 424-9300
CHEMTREC:	For emergencies in the US, call CHEMTREC: 800-424-9300

SECTION 2 : HAZARD(S) IDENTIFICATION

Classification of the chemical in accordance with CFR 1910.1200(d)(f):

GHS Pictograms: 

Signal Word:	DANGER.
GHS Class:	Serious Eye Damage. category 1. Specific Target Organ Toxicity -STOT Repeated exposure RE. category 1 (Inhalation, Lung). Specific Target Organ Toxicity - STOT, Single Exposure SE. Category 2 (CNS, Respiratory Irritation). Germ cell mutagenicity. Category 2. Skin Sensitization. category 1. Acute Oral Toxicity. Category 4.
Hazard Statements:	H318 - Causes serious eye damage. H372 - Causes damage to organs through prolonged or repeated exposure. H371 - May cause damage to organs. H341 - Suspected of causing genetic defects. H317 - May cause an allergic skin reaction. H302 - Harmful if swallowed.
Precautionary Statements:	P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P260 - Do not breathe dust/fume/gas/mist/vapours/spray. P261 - Avoid breathing dust/fume/gas/mist/vapours/spray. P264 - Wash hands thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P272 - Contaminated work clothing should not be allowed out of the workplace. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P302+P352 - IF ON SKIN: Wash with plenty of water. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308+P311 - IF exposed or concerned: Call a POISON CENTER/doctor/... P308+P313 - IF exposed or concerned: Get medical advice/attention. P310 - Immediately call a POISON CENTER or doctor/physician. P314 - Get medical advice/attention if you feel unwell. P321 - P330 - Rinse mouth. P333+P313 - If skin irritation or rash occurs: Get medical advice/attention. P362+P364 - Take off contaminated clothing and wash it before reuse. P405 - Store locked up. P501 - Dispose of contents/container in accordance with Local, State, Federal and Provincial regulations.

Hazards not otherwise classified that have been identified during the classification process:

Route of Exposure:	Eyes. Skin. Inhalation. Ingestion.
Potential Health Effects:	
Eye:	Corrosive. Will cause eye burns, permanent tissue damage, and blindness.
Skin:	Contact causes severe skin irritation and possible burns. may cause permanent skin damage. Allergic reactions are possible. May cause skin sensitization, an allergic reaction, which becomes evident on reexposure to this material.
Inhalation:	May cause severe respiratory system irritation.
Ingestion:	Harmful if swallowed. Corrosive to the gastrointestinal tract.
Chronic Health Effects:	Prolonged skin contact causes burns. Repeated or prolonged inhalation may cause toxic effects.
Signs/Symptoms:	Depending on solution concentration, material may be corrosive to skin, mucous membranes and eyes. Vapors may cause respiratory irritation.
Target Organs:	Eyes. Skin. Respiratory system. Digestive system. Central nervous system.
Aggravation of Pre-Existing Conditions:	Individuals with pre-existing skin disorders, asthma, allergies or known sensitization may be more susceptible to the effects of this product.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures:

Chemical Name	CAS#	Ingredient Percent	EC Num.
Phenol	108-95-2	1 - 10 by weight	
Glass oxide	65997-17-3	1 - 10 by weight	
2-Ethyl-4-Methylimidazole	931-36-2	1 - 10 by weight	
Silicon	7440-21-3	1 - 10 by weight	
Amorphous silicon dioxide	67762-90-7	1 - 10 by weight	
Triethylenetetramine	112-24-3	1 - 10 by weight	
Titanium dioxide	13463-67-7	1 - 10 by weight	
Formaldehyde polymer with phenol and TETA	32610-77-8	20 - 30 by weight	
Iron	7439-89-6	20 - 30 by weight	
Crystalline silica	14808-60-7	10 - 20 by weight	
Titanium	7440-32-6	1 - 10 by weight	

SECTION 4 : FIRST AID MEASURES

Description of necessary measures:

Eye Contact:	Immediately flush eyes with plenty of water for at least 15 to 20 minutes. Ensure adequate flushing of the eyes by separating the eyelids with fingers. Get immediate medical attention.
Skin Contact:	Immediately wash skin with plenty of soap and water for 15 to 20 minutes, while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists.
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.
Ingestion:	If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

SECTION 5 : FIRE FIGHTING MEASURES

Suitable and unsuitable extinguishing media:

Suitable Extinguishing Media:	Use carbon dioxide (CO2) or dry chemical when fighting fires involving this material.
Unsuitable extinguishing media:	Water or foam may cause frothing.

Special protective equipment and precautions for fire-fighters:

Protective Equipment:	As in any fire, wear Self-Contained Breathing Apparatus (SCBA), MSHA/NIOSH (approved or equivalent) and full protective gear.
Fire Fighting Instructions:	Evacuate area of unprotected personnel. Use cold water spray to cool fire exposed containers to minimize risk of rupture. Do not enter confined fire space without full protective gear. If possible, contain fire run-off water.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Personal Precautions:	Evacuate area and keep unnecessary and unprotected personnel from entering the spill area.

Environmental precautions:

Environmental Precautions:	Avoid runoff into storm sewers, ditches, and waterways.

Methods and materials for containment and cleaning up:

Spill Cleanup Measures:	Absorb spill with inert material (e,g., dry sand or earth), then place in a chemical waste container. Provide ventilation. Clean up spills immediately observing precautions in the protective equipment section. After removal, flush spill area with soap and water to remove trace residue. Corrosive. Avoid personal contact and breathing vapors or mists. Ventilate area. Use proper personal protective equipment as listed in Section 8.

Reference to other sections:

Other Precautions:	Pump or shovel to storage/salvage vessels.

SECTION 7 : HANDLING and STORAGE

Precautions for safe handling:

Handling:	Use with adequate ventilation. Avoid breathing vapor, aerosol or mist. Avoid contact with eyes and skin. Do not reuse containers without proper cleaning or reconditioning.
Hygiene Practices:	Wash thoroughly after handling.
Special Handling Procedures:	Provide appropriate ventilation/respiratory protection against decomposition products (see Section 10) during welding/flame cutting operations and to protect against dust during sanding/grinding of cured product.

Conditions for safe storage, including any incompatibilities:

Storage:	Store in a cool, dry, well ventilated area away from sources of heat and incompatible materials. Keep container tightly closed when not in use. Do not store in reactive metal containers. Keep away from acids, oxidizers.

SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE GUIDELINES:

Phenol :

Guideline ACGIH:	Skin: Yes. TLV-TWA: 5 ppm
Guideline OSHA:	PEL-TWA: 5 ppm Skin: Yes.

Silicon :

Guideline OSHA:	PEL-TWA: 15 mg/m3 Total particulate/dust (T) PEL-TWA: 5 mg/m3 Respirable fraction (R)

Titanium dioxide :

Guideline ACGIH:	TLV-TWA: 10 mg/m3

Crystalline silica :

Guideline ACGIH:	TLV-TWA: 0.025 mg/m3 (R)

Appropriate engineering controls:

Engineering Controls:	Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Good general ventilation should be sufficient to control airborne levels. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.

Individual protection measures:

Eye/Face Protection:	Wear appropriate protective glasses or splash goggles as described by 29 CFR 1910.133, OSHA eye and face protection regulation, or the European standard EN 166.
Skin Protection Description:	Chemical-resistant gloves and chemical goggles, face-shield and synthetic apron or coveralls should be used to prevent contact with eyes, skin or clothing.
Respiratory Protection:	A NIOSH approved air-purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.
Other Protective:	Facilities storing or utilizing this material should be equipped with an eyewash and a deluge shower safety station.

Notes : Only established PEL and TLV values for the ingredients are listed.

SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL AND CHEMICAL PROPERTIES:

Physical State Appearance:	Paste.
Color:	off-white.
Odor:	Mild ammonia like
Boiling Point:	>350°F (176.6°C)
Melting Point:	Not determined.
Specific Gravity:	1.78
Solubility:	APPRECIABLE.
Vapor Density:	Not determined.
Vapor Pressure:	<10.4 mmHg @70°F
Percent Volatile:	0
Evaporation Rate:	Not determined.
pH:	9.5-10.0 @ 5 Percent Solution
Molecular Formula:	Mixture
Molecular Weight:	Mixture
Flash Point:	277°F (136.1°C)
Flash Point Method:	Pensky-Martens Closed Cup
Lower Flammable/Explosive Limit:	Not determined.
Upper Flammable/Explosive Limit:	Not determined.
Auto Ignition Temperature:	Not determined.
VOC Content:	0 g/L

9.2. Other information:

Percent Solids by Weight	100

SECTION 10 : STABILITY and REACTIVITY

Chemical Stability:

Chemical Stability:	Stable under normal temperatures and pressures.

Possibility of hazardous reactions:

Hazardous Polymerization:	Not reported.

Conditions To Avoid:

Conditions to Avoid:	Extreme heat, sparks, and open flame. Incompatible materials, oxidizers and oxidizing conditions. Product may slowly corrode copper, aluminum, zinc and galvanized surfaces.

Incompatible Materials:

Incompatible Materials:	Oxidizers, acids, and chlorinated organic compounds. Reactive metals (e.g. sodium, calcium, zinc). Sodium/calcium hypochlorite. Nitrous acid/ oxide, nitrites. Peroxides. Materials reactive with hydroxyl compounds.

SECTION 11 : TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:

Phenol :

Eye:	Administration into the eye - Rabbit Standard Draize test: 5 mg [Severe] Administration into the eye - Rabbit Rinsed with water: 5 mg/30S [Mild] (RTECS)
Skin:	Administration onto the skin - Rat LD50 - Lethal dose, 50 percent kill: 669 mg/kg [Behavioral - Tremor Kidney/Ureter/Bladder - Hematuria Skin and Appendages - Cutaneous sensitization, experimental(After topical exposure)] Administration onto the skin - Rabbit LD50 - Lethal dose, 50 percent kill: 630 mg/kg [Details of toxic effects not reported other than lethal dose value] Administration onto the skin - Rat LD50 - Lethal dose, 50 percent kill: 1500 mg/kg [Details of toxic effects not reported other than lethal dose value] (RTECS)
Inhalation:	Inhalation - Rat LC50 - Lethal concentration, 50 percent kill: 316 mg/m3 [Details of toxic effects not reported other than lethal dose value] Inhalation - Rat LC50 - Lethal concentration, 50 percent kill: 316 mg/m3/4H [Details of toxic effects not reported other than lethal dose value] (RTECS)
Ingestion:	Oral - Rat LD50 - Lethal dose, 50 percent kill: 317 mg/kg [Behavioral - Convulsions or effect on seizure threshold] Oral - Rat LD50 - Lethal dose, 50 percent kill: 512 mg/kg [Details of toxic effects not reported other than lethal dose value] (RTECS)

Silicon :

Eye:	Administration into the eye - Rabbit Standard Draize test: 3 mg [Mild] (RTECS)
Ingestion:	Oral - Rat LD50 - Lethal dose, 50 percent kill: 3160 mg/kg [Details of toxic effects not reported other than lethal dose value] (RTECS)

Triethylenetetramine :

Eye:	Administration into the eye - Rabbit Standard Draize test: 49 mg [Severe] Administration into the eye - Rabbit Standard Draize test: 20 mg/24H [Moderate] (RTECS)
Skin:	Administration onto the skin - Rabbit LD50 - Lethal dose, 50 percent kill: 805 mg/kg [Details of toxic effects not reported other than lethal dose value] (RTECS)
Ingestion:	Oral - Rat LD50 - Lethal dose, 50 percent kill: 2500 mg/kg [Details of toxic effects not reported other than lethal dose value] (RTECS)

Titanium dioxide :

Chronic Effects:	Normal application procedures for this product pose minimal hazard as to the release of respirable titanium dioxide dust, but grinding or sanding dried films of this product may yield some respirable titanium dioxide. Although IARC has classified titanium dioxide as possible carcinogenic to human (2B), their summary concludes: "No significant exposure to titanium dioxide is thought to occur during the use of products which titanium dioxide is bound to other materials". OSHA does not regulate titanium dioxide as a carcinogen. However, under 29CFR 1910.1200 the SDS must convey the fact that titanium dioxide is a potential carcinogen to rats.
Carcinogenicity:	Animal evidence shows that high concentrations of pigment-grade (powdered) and ultrafine titanium dioxide dust caused respiratory tract cancer in rats exposed by inhalation.

Iron :

Ingestion:	Oral - Rat LD50 - Lethal dose, 50 percent kill: 30 gm/kg [Nutritional and Gross Metabolic - Weight loss or decreased weight gain] Oral - Rat LD50 - Lethal dose, 50 percent kill: 750 mg/kg [Blood - Changes in serum composition (e.g., TP, bilirubin, cholesterol) Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - Transaminases] (RTECS)

Crystalline silica :

Chronic Effects:	Long term exposure to crystalline silica may cause silicosis or lung cancer. Although normal application procedures for this product pose minimal hazard as to the release of crystalline silica dust, grinding or sanding cured product may generate some respirable crystalline silica.
Carcinogenicity:	Crystalline silica in the form of quartz or cristobalite dust causes cancer of the lung.

SECTION 12 : ECOLOGICAL INFORMATION

Ecotoxicity:

Ecotoxicity:	No ecotoxicity data was found for the product.
Environmental Fate:	No environmental information found for this product.

SECTION 13 : DISPOSAL CONSIDERATIONS

Description of waste:

Waste Disposal:	Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and/or state and local guidelines.
RCRA Number:	D002

SECTION 14 : TRANSPORT INFORMATION

DOT Shipping Name:	Refer to Bill of Lading
DOT UN Number:	Refer to Bill of Lading
IATA Shipping Name:	Refer to Bill of Lading

IATA UN Number:	Refer to Bill of Lading
IMDG UN Number :	Refer to Bill of Lading
IMDG Shipping Name :	Refer to Bill of Lading

SECTION 15 : REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product:

Phenol :

TSCA Inventory Status:	Listed
Section 302 EHS:	EPCRA (SARA Title III) Section 302 (40 CFR Part 355) Extremely Hazardous Substances (EHS) Threshold Planning Quantity (TPQ) in pounds.: 500/10,000
Section 313:	EPCRA - 40 CFR Part 372 - (SARA Title III) Section 313 Listed Chemical.
Canada DSL:	Listed

Glass oxide :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

2-Ethyl-4-Methylimidazole :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Silicon :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Amorphous silicon dioxide :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Triethylenetetramine :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Titanium dioxide :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Formaldehyde polymer with phenol and TETA :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Iron :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Crystalline silica :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Titanium :

TSCA Inventory Status:	Listed
Canada DSL:	Listed
Canadian Regulations.	WHMIS Hazard Class(es): D2B; E; D2A
WHMIS Pictograms:	

SECTION 16 : ADDITIONAL INFORMATION

HMIS Ratings:

HMIS Health Hazard:	3*
HMIS Fire Hazard:	1
HMIS Reactivity:	1
HMIS Personal Protection:	X

Health Hazard	3*
Fire Hazard	1
Reactivity	1
Personal Protection	X

* Chronic Health Effects

SDS Revision Date:	May 19, 2015
SDS Revision Notes:	GHS Update

SDS Format:	In accordance to OSHA GHS 1910.1200
SDS Author:	Actio Corporation
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