

MATERIAL SAFETY DATA SHEET

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Product Name: **SEALXPERT® PL103 ALUMINIUM REPAIR LIQUID**

MSDS no: 184

Revision no: 5

Issue Date: 1 Feb 2016

Section 1 – Company Details

Company Name: SealXpert™ Products

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Section 2 – Composition (Component A -SDS)

INGREDIENTS	CAS NO.	%	EXPOSURE LIMITS
Aluminum flake	7429-90-5	50-60	N/A
Alkyl Glycidyl Ether	68609-97-2	1-10	N/A
Bisphenol A diglycidyl ether resin	25068-38-6	20-30	N/A
Calcium Carbonate	1317-65-3	10-20	N/A
Proprietary ingredient(s)	N/A	0.1-0.1	

Section 3 – Hazardous Identification

Causes serious eye irritation.

Causes skin irritation.

May cause an allergic skin reaction.

May cause respiratory irritation.

Route of Exposure: Eyes, Skin, Inhalation, Ingestion

Potential Health

Effect:

Inhalation: Respiratory tract irritant. High concentration may cause dizziness, headache, and anesthetic effects.

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.

Eye: Can cause moderate irritation, burning sensation, tearing, redness, and swelling. Overexposure may cause lacrimation, conjunctivitis, corneal damage and permanent injury.

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.

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Section 4 – Emergency and First Aid Response

- 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 and Explosion Hazard Data

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:

Personnel 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.

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Section 7 – Handling and Storage

Precaution for safety 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

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.
- Skin Protection Description:** Wear appropriate protective gloves and other protective apparel to prevent skin contact. Consult manufacturer's data for permeability data.
- Respiratory Protection:** An 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.

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Section 9 – Physical and Chemical Characteristics

Physical State Appearance:	Paste
Colour:	Grey
Odour :	Slight
Boiling Point :	>500°F (260°C)
Melting Point:	Not determined.
Specific Gravity:	1.64
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

Stability :	Stable under normal temperatures and pressures.
Hazardous polymer:	Not reported.
Incompatibility:	Polymerizes in presence water
Conditions to avoid:	Strong Lewis or mineral acids, strong oxidizing agents, strong mineral and organic bases (especially primary and secondary aliphatic amines).

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Section 11 – Toxicological Information

Alkyl Glycidyl Ether :

Ingestion::

Oral - Rat LD50 - Lethal dose, 50 percent kill: 17100 mg/kg [Details of toxic effects not reported other than lethal dose value]

Oral - Rat LD50 - Lethal dose, 50 percent kill: 19.2 mL/kg [Details of toxic effects not reported other than lethal dose value] (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

No data available

Section 13 – Disposal Considerations

Waste Disposal:

The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional and local authority requirements. Avoid disposal of spilled material and runoff and contact with soil, waterways, drains and sewers. Dispose of contaminated containers, soils, etc. in compliance with the requirements of environmental protection and waste disposal legislation and any regional and local authority requirements.

Section 14 – Transportation Information

Transportation: Not classified as Dangerous Goods and can be transported by Road, Rail and Air.

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The item is not restricted or not regulated as per IATA

Section 15 – Regulatory Information

Regulation: Observe the governmental or local regulations to use the chemical product safely.

Section 16 – Other Information

This data sheet completes the technical notices but does not supersede them. The information contained in it is grounded to the statement of our knowledge of the product concerned at the publishing date.

Moreover, user's attention should be drawn on the possible risks incurred when a product is used for other purposes than those for which it has been designed. It does not stop in any case the user knowing and following the whole regulatory texts related to his activity. He will be the sole responsible of the precautions related to the use of the products he knows.

The aim of the whole regulatory prescriptions mentioned is to help the receiver to fulfill his duties when using the product. This list must not be considered as exhaustive. It does not stop the user from making sure that he complies with the written obligations other than those previously cited and which rule the fact of keeping and using the product for which he is the sole responsible person.

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Section 2 – Composition (Component B - SDS)

INGREDIENTS	CAS NO.	%	EXPOSURE LIMITS
Aliphatic Amines	No Data	40-50	N/A
Triethylenetetramine	112-24-3	20-30	N/A
Benzyl alcohol	100-51-6	20-30	N/A

Section 3 – Hazardous Identification

Hazard Causes serious eye damage.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.

Route of Exposure: Eyes, Skin, Inhalation, Ingestion

Potential Health

Effect:

Inhalation: May cause severe respiratory system irritation. May cause respiratory sensitization with asthma-like symptoms in susceptible individuals..

Skin: Corrosive causes severe skin 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.

Eye: Corrosive. Will cause eye burns, permanent tissue damage, and blindness..

Ingestion: Harmful if swallowed. Corrosive to the gastrointestinal tract.

Chronic Health Prolonged skin contact causes burns.

Effects: 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.

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 4 – Emergency and First Aid Response

Eye Contact: Immediately flush eye(s) with plenty of water. Hold eyelids apart, initiate and maintain gentle and continuous irrigation until the patient receives medical care If medical care is not promptly available, continue to irrigate for one hour

Skin Contact: Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay Initiate and maintain continuous irrigation until the patient receives medical care If medical care is not promptly available, continue to irrigate for one hour

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.

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Section 5 – Fire and Explosion Hazard Data

Suitable and unsuitable extinguishing media:

Suitable Extinguishing Media: Alcohol resistant foam, carbon dioxide, dry chemical, dry sand, and limestone powder

Unsuitable extinguishing media: Water or foam may cause frothing.

Hazardous Combustion Byproducts: Burning produces noxious and toxic fumes.

Unusual Fire Hazards: May generate ammonia gas. May generate toxic nitrogen oxide gases. Use of water may result in the formation of very toxic aqueous solutions. Incomplete combustion may form carbon monoxide. Downstream personnel must be evacuated.

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

Section 6 – Accidental Release Measures

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

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

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.

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. When using, do not eat, drink or smoke.

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.

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Section 8 – Exposure Controls / Personal Protection

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.

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.

Hand Protection Description: Neoprene gloves. Butyl rubber. Nitrile rubber. Impervious gloves.

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.

Section 9 – Physical and Chemical Characteristics

Physical State Appearance:	Liquid.
Colour	Amber
Odor:	Amine odor
Boiling Point:	421 °F (216 °C)
Melting Point:	Not determined
Specific Gravity:	0.97 at 70 °F (21.1 °C)
Solubility:	Completely miscible.
Vapour Density:	Not determined
Vapour Pressure:	4.31 mmHg at 70 °F (21.1 °C)
Percent Volatile:	Not determined.
Evaporation Rate:	Not determined.
pH:	alkaline
Viscosity:	200 - 400 mPa.s at 70 °F (21.1 °C)
Lower Flammable/Explosive Limit:	Not determined
Upper Flammable/Explosive Limit:	Not determined
Auto Ignition Temperature:	Not determined
VOC Content:	Not determined
Percent Solids by Weight	100

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Section 10 – Stability and Reactivity

Chemical Stability:	Stable under normal temperatures and pressures.
Hazardous Polymerization:	Not reported.
Condition 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:	Oxidizing agents, mineral acids, organic acids (i.e. acetic acid, citric acid, etc.) sodium hypochlorite, reactive metals (e.g. sodium, calcium, zinc, etc.), materials reactive with hydroxyl compounds. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Reactions with peroxides may result in violent decomposition of peroxide possibly creating an explosion.
Special Decomposition Products:	Nitric acid, Oxides of carbon and nitrogen, aldehydes and ammonia. Nitrogen oxide can react with water vapors to form corrosive nitric acid. Flammable hydrocarbon fragments.

Section 11 – Toxicological Information

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)

Benzyl alcohol :

Skin:	Administration onto the skin - Rabbit LD50 - Lethal dose, 50 percent kill: 2000 mg/kg [Details of toxic effects not reported other than lethal dose value] (RTECS)
Inhalation:	Inhalation - Rat LC50 - Lethal concentration, 50 percent kill: >500 mg/m ³ [Behavioral - Somnolence (general depressed activity) Behavioral - Ataxia Lungs, Thorax, or Respiration - Respiratory depression] (RTECS)
Ingestion:	Oral - Rat LD50 - Lethal dose, 50 percent kill: 1230 mg/kg [Behavioral - Somnolence (general depressed activity) Behavioral - Excitement Behavioral - Coma] Oral - Rat LD50 - Lethal dose, 50 percent kill: 1660 mg/kg [Behavioral - Somnolence (general depressed activity) Behavioral - Ataxia Lungs, Thorax, or Respiration - Respiratory depression] Oral - Rat LD50 - Lethal dose, 50 percent kill: 1.5 mL/kg [Details of toxic effects not reported other than lethal dose value] (RTECS)

Section 12 – Ecological Information

No data available.

Section 13 – Disposal Considerations

Water Disposal:	The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional and local authority requirements. Avoid disposal of spilled material and runoff and contact with soil, waterways, drains and sewers. Dispose of contaminated containers, soils, etc. in compliance with the requirements of environmental protection and waste disposal legislation and
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any regional and local authority requirements.

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Section 14 – Transportation Information

Transportation: Not classified as Dangerous Goods and can be transported by Road, Rail and Air.
The item is not restricted or not regulated as per IATA

Section 15 – Regulatory Information

Regulation: Observe the governmental or local regulations to use the chemical product safely.

Section 16 – Regulatory Information

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Moreover, user's attention should be drawn on the possible risks incurred when a product is used for other purposes than those for which it has been designed. It does not stop in any case the user knowing and following the whole regulatory texts related to his activity. He will be the sole responsible of the precautions related to the use of the products he knows.

The aim of the whole regulatory prescriptions mentioned is to help the receiver to fulfill his duties when using the product. This list must not be considered as exhaustive. It does not stop the user from making sure that he complies with the written obligations other than those previously cited and which rule the fact of keeping and using the product for which he is the sole responsible person.