

**TEKNOFLOR®**  
**TEKNOFLOR® EX-4000**

**MATERIAL SAFETY DATA SHEET**

(REV: SEPT 2008)

**SECTION 1: PRODUCT IDENTIFICATION**

**PRODUCT NAME:** Teknoflor® EX-4000 PART A

**FAMILY:** Solvent-Free Epoxy

**SECTION 2: HAZARDOUS INGREDIENTS AND EXPOSURE LIMITS**

<u>CHEMICAL NAME</u>	<u>CAS NUMBER</u>	<u>% BY WEIGHT</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>
Polyurethane				
Prepolymer	Proprietary	11-17	NA	NA
Epoxy Resin	025085-99-8	25-35	NA	NA
C <sub>12</sub> – C <sub>14</sub> Monofunctional				
Epoxy Diluent	68609-97-2	5-9	Not Established	Not Established
Calcium Carbonate	1317-66-3	45-60	10mg/M <sup>3</sup>	10mg/M <sup>3</sup>
Sillios	67762-90-7	1-3	10mg/M <sup>3</sup>	10mg/M <sup>3</sup>

**SECTION 3: HAZARDS IDENTIFICATION**

**PRIMARY ROUTES OF ENTRY:** Eyes, skin, respiratory, and central nervous system.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Respiratory problems.

**POTENTIAL HEALTH EFFECTS:**

- **EYE CONTACT:** May cause severe irritation. May damage eyes.
- **SKIN CONTACT:** Prolonged exposure may cause irritation. May cause drying or flaking of skin. Skin absorption of material may cause systemic toxicity.
- **INGESTION:** May cause severe injury to intestinal tract, liver, kidneys, stomach, throat, lungs, mouth, and mucous membranes. Harmful or fatal if swallowed. **DO NOT INGEST.**
- **INHALATION:** Overexposure may cause severe respiratory tract irritation. Prolonged over-exposure may cause central nervous system depression with narcotic effects (headaches, dizziness, unconsciousness). Keep exposure below OSHA exposure limits.
- **CHRONIC:** Liver and kidney damage. May cause corneal opacity. May cause central nervous system depression causing headaches, nausea, and dizziness.
- **CARCINOGENICITY:** This product contains no ingredient listed as a carcinogen by IARC, NTP or OSHA.

**SECTION 4: FIRST AID MEASURES**

- **EYE CONTACT:** Flush with water for 15 minutes. Contact a physician if irritation occurs.
- **SKIN CONTACT:** Wash with soap and water. Get medical attention if irritation develops or persists. Immediately remove contaminated clothing.
- **INGESTION:** If swallowed, seek medical attention immediately!
- **INHALATION:** Remove to fresh air. Restore breathing if necessary. Get medical attention. This material can cause lung damage. Do not leave victim unattended.

## **SECTION 5: FIRE-FIGHTING MEASURES**

FLASH POINT: (°)F:  $\geq 200^{\circ}\text{F}$ . Setaflash Method.

LOWER FLAMMABLE LIMIT: None

FIRE-FIGHTING INSTRUCTIONS: Use protective clothing and self-contained breathing apparatus.

GENERAL HAZARD: Toxic gases will form upon combustion. Closed containers may explode when exposed to extreme heat.

EXTINGUISHING MEDIA: Water fog,  $\text{CO}_2$ , dry chemical and chemical foam.

DECOMPOSITION PRODUCTS: Material can produce  $\text{CO}$ ,  $\text{CO}_2$ ,  $\text{H}_2\text{O}$ , smoke, fumes, Toluene Diisocyanate and other products from the burning of aromatic hydrocarbons.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Keep all sources and hot metal away from spill. Isolate the danger area and keep unauthorized personnel out. Stop spill if it can be done with minimal risk. Wear appropriate protective equipment including respirator protection as conditions warrant. Prevent additional discharge of material. Notify the appropriate authorities immediately. Contain spilled liquid with sand, earth, or other non-combustible inert absorbent material. Prevent run off from entering storm sewers, ditches, or waterways. Use non-sparking tools to transfer absorbed waste material into properly identified drums. Treat waste material with same precautions as the adhesive. DO NOT use solvent or flammable liquid to help clean up any accidental releases. Release to the environment may be reportable under environmental regulations.

## **SECTION 7: HANDLING AND STORAGE**

HANDLING: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel or container to another. This material can accumulate static charge by flow or agitation. Use spark-proof tools and explosion-proof equipment as directed by local fire codes. DO NOT enter confined spaces such as tanks without following proper entry procedures as described in OSHA regulations 29 CFR 1910.146. DO NOT breathe vapors. The use of respiratory protection is recommended when airborne concentrations of vapor exceed exposure guidelines. Wash thoroughly after handling. DO NOT wear contaminated clothing or shoes. Wear appropriate protective gloves and clothing to prevent prolonged or repeated skin contact. Avoid contact with eyes. Use good hygienic practices. Keep out of reach of children.

STORAGE: Keep containers tightly closed. Use and store this material in cool, dry, well-ventilated area away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No smoking or open flames". Store only in approved containers. Protect containers against physical damage. Indoor storage should meet OSHA standards and appropriate fire codes. Wash with soap and water before eating, drinking, smoking, or using toilet facilities. Consult NAFA and OSHA codes.

EMPTY CONTAINERS: Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or drum re-conditioner. All containers should be disposed of in accordance with governmental regulations.

## **SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**

PERSONAL PROTECTIVE EQUIPMENT:

- **EYE/FACE PROTECTION:** Approved chemical splash goggles should be worn to safeguard against potential eye contact, irritation, or injury. Where splashing is likely to occur, hard hats and face shields may be used to provide additional protection. Eye wash facilities should be available in work area.
- **SKIN PROTECTION:** The use of gloves impermeable to the specific material handled is advised to prevent prolonged or repeated skin contact. Where splashing is likely to occur, aprons impermeable to the specific material may be worn. Refer to the glove and protective clothing manufacturer's selection guide for appropriate material.
- **RESPIRATORY PROTECTION:** A NIOSH/MSHA approved air-purifying respirator with an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure guidelines. Protection provided by air purifying respirators is limited. Refer to respirator manufacturer's selection guide for appropriate respirator for conditions encountered. If in doubt, seek the advice of an industrial hygienist or safety professional for appropriate air purifying respiratory equipment. Use positive pressure air supplied respirator if there is potential for an uncontrolled release, exposure levels are not known, or in any other circumstances where air-purifying respirators may not provide adequate protection. Respiratory protection does not provide safety from flammable atmospheres. Do not enter concentrations of vapors at, near or above the lower flammable limit. When respiratory protection is used, a respiratory protection program meeting OSHA regulations at 29 CFR 1910.134 must be followed.
- **ENGINEERING CONTROLS:** Provide sufficient mechanical ventilation to maintain exposure below OSHA limits. The use of local exhaust ventilation is recommended. Provide mechanical ventilation of confined spaces. If

current ventilation practices are not adequate to maintain airborne concentrations below the established exposure guidelines, additional ventilation or exhaust systems may be required. Use explosion-proof ventilation equipment.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

BOILING POINT: (°F): >425  
SPECIFIC GRAVITY (WATER = 1): 1.5  
% VOLATILE BY WEIGHT: <1  
APPEARANCE AND ODOR: Beige thick paste with little or no odor.  
GRAMS VOLATILE ORGANIC COMPOUNDS/LITER OF COATING: <12

**SECTION 10: STABILITY AND REACTIVITY**

CHEMICAL STABILITY: Keep away from flames and spark producing equipment. Not dangerously unstable. When heated about 250°F, TDI is released. TDI is a Carcinogen.  
POLYMERIZATION: Will Not Occur.  
CONDITIONS TO AVOID: Strong oxidizing agents, strong reducing agents, acids, bases or unstable chemicals, chloroform, nitric compounds, peroxides, sulfur dichloride, strong alkalis, amines, anhydrides, mercaptans, materials that react with epoxies.

**SECTION 11: TOXICOLOGICAL INFORMATION**

No Information Available.

**SECTION 12: ECOLOGICAL INFORMATION**

No Information Available.

**SECTION 13: DISPOSAL CONSIDERATIONS**

Disposed of in accordance with Federal, State, and Local regulations.

**SECTION 14: TRANSPORT INFORMATION**

For domestic transportation purpose, this product is not designated as a hazardous material by the U.S. Department of Transportation.

**SECTION 15: REGULATORY INFORMATION**

TSCA: All Ingredients Listed.

SARA TITLE III:

Section 311 and 312 Health and Physical Hazards:

Immediate	Delayed	Fire	Pressure	Reactivity
[X]	[ ]	[ ]	[ ]	[ ]

WHMIS: This product is a "controlled product" under Canadian Workplace Hazardous Materials Information System.

**SECTION 16: OTHER INFORMATION**

HMIS RATINGS: Health = 1 Flammability = 1  
Reactivity = 0 Personal Protective Equipment = B  
Hazard rating scale: 0=Minimal, 1=Slight, 2=Moderate, 3=Serious, 4=Severe

# TEKNOFLOR® EX-4000

## MATERIAL SAFETY DATA SHEET

### SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: Teknoflor® EX-4000 PART B

FAMILY: Epoxy Curative

### SECTION 2: HAZARDOUS INGREDIENTS AND EXPOSURE LIMITS

<u>CHEMICAL NAME</u>	<u>CAS NUMBER</u>	<u>% BY WEIGHT</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>
Polyamide	68410-23-1	23-33	Not Established	Not Established
Polyamine	Proprietary	6-12	Not Established	Not Established
Phenol	108-95-2	6-9	5 ppm	5 ppm
Tetraethylene Pentamine	112-57-2	3-8	Not Established	Not Established
Butyl benzyl Phthalate	85-68-7	3-8	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Calcium Carbonate	1317-65-3	35-50	510 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>

### SECTION 3: HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY: Eyes, skin, respiratory, and central nervous system.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Respiratory problems.

POTENTIAL HEALTH EFFECTS:

- EYE CONTACT: May cause severe irritation. May damage eyes.
- SKIN CONTACT: Prolonged exposure may cause irritation. May cause drying or flaking of skin. Skin absorption of material may cause systemic toxicity.
- INGESTION: May cause severe injury to intestinal tract, liver, kidneys, stomach, throat, lungs, mouth, and mucous membranes. Harmful or fatal if swallowed. DO NOT INGEST.
- INHALATION: Overexposure may cause severe respiratory tract irritation. Prolonged over-exposure may cause central nervous system depression with narcotic effects (headaches, dizziness, unconsciousness). Keep exposure below OSHA exposure limits.
- CHRONIC: Liver and kidney damage. May cause corneal opacity. May cause central nervous system depression causing headaches, nausea, and dizziness.
- CARCINOGENICITY: None Known.

### SECTION 4: FIRST AID MEASURES

- EYE CONTACT: Flush with water for 15 minutes. Contact a physician if irritation occurs.
- SKIN CONTACT: Wash with soap and water. Get medical attention if irritation develops or persists. Immediately remove contaminated clothing.
- INGESTION: If swallowed, seek medical attention immediately!
- INHALATION: Remove to fresh air. Restore breathing if necessary. Get medical attention. This material can cause lung damage.

### SECTION 5: FIRE-FIGHTING MEASURES

FLASH POINT: (°)F: ≥ 200°F. Setaflash Method.

LOWER FLAMMABLE LIMIT: None

FIRE-FIGHTING INSTRUCTIONS: Use protective clothing and self-contained breathing apparatus.

EXTINGUISHING MEDIA: Water fog, CO, CO<sub>2</sub>, H<sub>2</sub>O, smoke, fumes, nitrogen oxides, amino compounds, and other products from the burning of aromatic hydrocarbons.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Keep all sources and hot metal away from spill. Isolate the danger area and keep unauthorized personnel out. Stop spill if it can be done with minimal risk. Wear appropriate protective equipment including respirator protection as conditions warrant. Prevent additional discharge of material. Notify the appropriate authorities immediately. Contain spilled liquid with sand, earth, or non-combustible inert absorbent material. Prevent run off from entering storm sewers, ditches, or waterways. Use non-sparking tools to transfer absorbed waste material into properly identified drums. Treat waste material with same precautions as the adhesive. DO NOT use solvent or flammable liquid to help clean up any accidental releases. Release to the environment may be reportable under environmental regulations.

## **SECTION 7: HANDLING AND STORAGE**

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**STORAGE:** Keep containers tightly closed. Use and store this material in cool, dry, well-ventilated area away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No smoking or open flames". Store only in approved containers. Protect containers against physical damage. Indoor storage should meet OSHA standards and appropriate fire codes. Wash with soap and water before eating, drinking, smoking, or using toilet facilities. Consult NAFA and OSHA codes.

**EMPTY CONTAINERS:** Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or drum reconditioner. All containers should be disposed of in accordance with governmental regulations.

## **SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**

### **PERSONAL PROTECTIVE EQUIPMENT:**

- **EYE/FACE PROTECTION:** Approved chemical splash goggles should be worn to safeguard against potential eye contact, irritation, or injury. Where splashing is likely to occur, hard hats and face shields may be used to provide additional protection. Eye wash facilities should be available in work area.
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- **RESPIRATORY PROTECTION:** A NIOSH/MSHA approved air-purifying respirator with an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure guidelines. Protection provided by air purifying respirators is limited. Refer to respirator manufacturer's selection guide for appropriate respirator for conditions encountered. If in doubt, seek the advice of an industrial hygienist or safety professional for appropriate air purifying respiratory equipment. Use positive pressure air supplied respirator if there is potential for an uncontrolled release, exposure levels are not known, or in any other circumstances where air-purifying respirators may not provide adequate protection. Respiratory protection does not provide safety from flammable atmospheres. Do not enter concentrations of vapors at, near or above the lower flammable limit. When respiratory protection is used, a respiratory protection program meeting OSHA regulations at 29 CFR 1910.134 must be followed.
- **ENGINEERING CONTROLS:** Provide sufficient mechanical ventilation to maintain exposure below OSHA limits. The use of local exhaust ventilation is recommended. Provide mechanical ventilation of confined spaces. If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure guidelines, additional ventilation or exhaust systems may be required. Use explosion-proof ventilation equipment.

## **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**BOILING POINT:** 350° F

**SPECIFIC GRAVITY (WATER = 1):** 1.3

**% VOLATILE BY WEIGHT:** <1

**APPEARANCE AND ODOR:** Beige paste with amine or ammonia odor.

**GRAMS VOLATILE ORGANIC COMPOUNDS/LITER OF COATING:** <12

## **SECTION 10: STABILITY AND REACTIVITY**

**CHEMICAL STABILITY:** Stable.

**POLYMERIZATION:** Will Not Occur.

**CONDITIONS TO AVOID:** Strong oxidizing agents, strong reducing agents, acids, bases, or unstable chemicals, chloroform, nitric compounds, peroxides, sulfur dichloride, strong alkalis, amines, anhydrides, mercaptans, materials that react with epoxies.

## **SECTION 11: TOXICOLOGICAL INFORMATION**

No Information Available.

**SECTION 12: ECOLOGICAL INFORMATION**

No Information Available.

**SECTION 13: DISPOSAL CONSIDERATIONS**

Disposed of in accordance with Federal, State, and Local regulations.

**SECTION 14: TRANSPORT INFORMATION**

For domestic transportation purpose, this product is not designated as a hazardous material by the U.S. Department of Transportation.

**SECTION 15: REGULATORY INFORMATION**

TSCA: All Ingredients Listed.

CERCLA:

<u>Chemical Name</u>	<u>RQ</u>
Phenol	1,000 lbs.

SARA TITLE III:

Section 311 and 312 Health and Physical Hazards:

Immediate	Delayed	Fire	Pressure	Reactivity
[X]	[ ]	[ ]	[ ]	[ ]

Section 313 Chemicals:

<u>Chemical Name</u>	<u>CAS#</u>	<u>% by Weight</u>
Phenol	108-95-2	3 - 9

WHMIS: This product is a "controlled product" under Canadian Workplace Hazardous Materials Information System.

**SECTION 16: OTHER INFORMATION**

HMIS RATINGS: Health = 2 Flammability = 1  
 Reactivity = 0 Personal Protective Equipment = B  
 Hazard rating scale: 0=Minimal, 1=Slight, 2=Moderate, 3=Serious, 4=Severe

**Teknoflor® and Shannon Sales, Inc. believes the statements, technical information and recommendations contained herein are reliable. They are given without a warranty or guarantee of any kind, expressed or implied.**