

SHIELD-TEC™ 802 F

1. Identification of the substance/mixture and of the company/undertaking

Product identifier: SHIELD-TEC™ 802 F

Product code: SHIELD-TEC™ 802 F part A & B

Relevant identified uses of the substance or mixture and uses advised against

Recommended use: Epoxy resin (part A), hardener (part B)

Restriction on use: For industrial use only

Details of the supplier of the safety data sheet

Company: Polymères Technologies Inc
6330 boulevard Laurier Ouest
Saint-Hyacinthe (Québec)
Canada, J2S 9A7
1 866-799-3058

24-hour Emergency Phone number (CANUTEC): 1 888 226-8832

2. Hazards identification

Classification of the substance or mixture

PART (A) Skin corrosion/skin irritation – Category 2
Serious eye damage/eye irritation – Category 2A
Skin sensitization – Category 1
(Long-term) danger for aquatic environments – Category 2

PART (B) Acute toxicity (cutaneous) – Category 4
Skin corrosion/irritation – Category 1B
Serious eye damage/eye irritation – Category 1
Skin sensitization – Category 1
(Acute) danger for aquatic environments – Category 2
(Long-term) danger for aquatic environments – Category 3

See toxicological information, section 11

Label elements

PART A

Hazard pictograms



Signal word: WARNING

PART B

Hazard pictograms



Signal word: DANGER

Hazard statement(s)

PART A

H319

Causes serious eye irritation.

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H315	Causes skin irritation.
H317	Can cause cutaneous allergy.
H411	Toxic to aquatic organisms, causes long-term adverse effects.

PART B

H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	Can cause cutaneous allergy.
H401	Toxic to aquatic organisms.
H412	Harmful to aquatic organisms, causes long-term adverse effects.

Prevention statement(s)

PART A

P280	Wear safety gloves. Wear eye or face protection.
P273	Avoid release into the environment.
P261	Do not breathe vapors.
P264	Wash hands thoroughly after handling.
P272	Contaminated work clothing should not be taken out of the workplace.

PART B

P280	Wear safety gloves. Wear eye or face protection.
P273	Avoid release into the environment.
P261	Do not breathe vapors.
P264	Wash hands thoroughly after handling.
P272	Contaminated work clothing should not be taken out of the workplace.

Response statement(s)

PART A

P391	Collect spilled material.
P302+P352+P362+P364	IF ON SKIN: Wash with plenty of soap and water. Remove contaminated clothing and wash before reuse.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if the victim wears them and they can be easily removed. Continue rinsing.
P337+P313	IF EYE IRRITATION PERSISTS: Get medical attention.

PART B

P304+P340+P312	IF INHALED: Remove person to fresh air and keep in a position where they can breathe comfortably. Call a poison control center or doctor if you feel unwell.
P301+P310+P330+P331	IF SWALLOWED: Call a poison control center or doctor immediately. Rinse your mouth. Do not induce vomiting.
P303+P361+P353+P363+P310	IF ON SKIN (or hair): Immediately remove all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. Call a poison control

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center or doctor immediately.

P302+P352+P312+P362+P364 IF ON SKIN: Wash with plenty of soap and water. Remove contaminated clothing and wash before reuse.

P333+P313 IF SKIN IRRITATION OR RASH IS EVENTED: Get medical attention.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if the victim wears them and they can be easily removed. Continue rinsing. Call a poison control center or doctor immediately.

Storage: Keep in a locked area.

Disposal: Dispose of contents/container in accordance with local / regional / national / international regulations.

Other hazards: No other effects shown.

3. Composition / information on ingredient(s)

Ingredient name	% (p/p)	CAS number
PART (A)		
Prod. of reaction of epichlorohydrin & bisphenol A	50 – 70	14808-60-7
Amorphous silica, sublimated	10 – 15	14808-60-7
Technical c2-c14 glycidyl alkyl ether	5 – 10	68609-97-2
Titanium dioxide	5 – 10	1346-67-7
PART (B)		
Cyclohexanemethanamine, 5-amino-1,3,3-thimethyl	45 – 70	2855-13-2
Isophorone diamine	10 – 15	100-51-6
Prod. of reaction of epichlorohydrin & bisphenol A	1 – 5	14808-60-7
Salicylic acid	5 – 10	69-72-7

In the current state of knowledge of the supplier and in the concentrations of application, no other ingredient present is classified as hazardous to health or the environment, and therefore would require inclusion in this section.

Occupational exposure limits, when available, are listed in Section 8.

4. First-aid measures

Description of first-aid measures

Eye contact: Seek medical attention immediately. Call a poison control center or doctor. Immediately flush eyes with plenty of water, lifting the upper and lower eyelids from time to time. Check if the victim is wearing contact lenses and if so, remove them. Continue rinsing for at least 20 minutes. See a doctor.

Skin contact: Seek medical attention immediately. Call a poison control center or doctor. Wash with plenty of soap and water. Wash contaminated clothing with plenty of water before removing it, or wear gloves. Continue rinsing for at least 20 minutes. See a doctor. In case of complaints or symptoms, avoid further exposure. Wash clothing before reuse. Wash shoes thoroughly before putting them back on.

Inhalation: Seek medical attention immediately. Call a poison control center or doctor. Remove the victim outside

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and keep them at rest in a position where they can breathe comfortably. If it is suspected that fumes are still present, the rescuer must wear a suitable mask or self-contained breathing apparatus. If there is no breathing, irregular breathing or respiratory arrest, qualified personnel should administer artificial respiration or oxygen. Mouth-to-mouth can be dangerous for the person providing assistance. See a doctor. If necessary, call a poison control center or doctor. If the person is unconscious, place them in the recovery position and seek medical attention immediately. Ensure good air circulation. Loosen anything that might be tight, such as a collar, tie, belt or waistband. If decomposition products are inhaled in a fire, symptoms may appear delayed. The exposed person may require medical supervision for 48 hours. In case of complaints or symptoms, avoid further exposure.

Ingestion: Seek medical attention immediately. Call a poison control center or doctor. Wash mouth with water. Remove dentures if necessary. Remove the victim to fresh air and keep them at rest in a position where they can breathe comfortably. If material is ingested and the exposed person is conscious, give small amounts of water to drink. Stop if person feels ill, as vomiting can be dangerous. Do not induce vomiting unless otherwise instructed by medical personnel. If vomiting occurs, keep your head down to prevent vomit from entering the lungs. See a doctor. Do not give anything to an unconscious person. If the person is unconscious, place them in the recovery position and seek medical attention immediately. Ensure good air circulation. Loosen anything that might be tight, such as a collar, tie, belt, or waistband.

Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact:	Causes serious eye damage.
Inhalation:	No known significant effects or critical hazards.
Skin contact:	Causes severe burns. Can cause cutaneous allergy.
Ingestion:	No known significant effects or critical hazards.

Signs/symptoms of overexposure

Eye contact:	Adverse symptoms may include pain, tearing, and/or redness.
Inhalation:	No known significant effects or critical hazards.
Skin contact:	Adverse symptoms may include pain, irritation, and redness. The blistering may eventually disappear.
Ingestion:	Adverse symptoms may include stomach pain.

Indication of any immediate medical attention and special treatment needed

Note to attending physician: If decomposition products are inhaled in a fire, symptoms may appear delayed. The exposed person may require medical supervision for 48 hours.

Special treatments: No specific treatment.

Protection of rescuers: Do not take any action involving personal risk or without adequate training. If it is suspected that fumes are still present, the rescuer must wear a suitable mask or self-contained breathing apparatus. Mouth-to-mouth can be dangerous for the person providing assistance. Wash contaminated clothing with plenty of water before removing it, or wear gloves. **See toxicological information (section 11).**

5. Firefighting measures

Extinguishing media: Use dry chemicals, CO₂, water spray (mist) or foam.

Unsuitable extinguishing media: None known.

Specific product hazards

If this product is heated or comes into contact with fire, an increase in pressure will occur and the container may burst. This substance is toxic to aquatic organisms, with long-term adverse effects. Water from the fire

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extinguishing network which has been contaminated by this product must be kept in a closed environment and must not be discharged into any waterway, sewer or drain.

Hazardous thermal decomposition product

Decomposition products may include carbon dioxide, carbon monoxide, nitrogen oxides and halogenated compounds.

Special protective measures for firefighters

In the event of a fire, quickly surround the site by evacuating anyone near the scene of the accident. Do not take any action involving personal risk or without adequate training.

Special protective equipment for firefighting personnel

It is imperative that firefighters wear adequate protective equipment, as well as a self-contained breathing apparatus (SCBA) equipped with a positive pressure face mask.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-rescuers:	Do not take any action involving personal risk or without adequate training. Evacuate the surrounding area. Prevent access to annoying or unprotected people. Do not touch or walk in spilled product. Ensure adequate ventilation. Wear appropriate respirator when ventilation system is inadequate. Wear appropriate personal protective equipment.
For emergency responders:	If specialized clothing is required to deal with a spill, note any information given in Section 8 on whether materials are suitable or not. Also see the information under "For non-emergency personnel".
Environmental precautions:	Avoid dispersal of spilled materials, runoff and contact with soil, waterways, drains and sewers. Inform the competent authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Polluting substance in water. May be harmful to the environment if released in large quantities. Collect spilled material.

Methods and material for containment and cleaning up

Spills:	Stop the leak if this involves no risk. Move containers from spill area. Approach the fumes in the same direction as the wind. Prevent entry into sewers, watercourses, basements or confined areas. Dispose of spills in an effluent treatment plant or proceed as follows. Contain spills and clean up using non-combustible absorbent materials such as sand, earth, vermiculite, and diatomaceous earth.
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Reference to other sections:

See section 1 for emergency contacts.

See section 8 to obtain information about appropriate individual protection equipment.

See section 13 for more information on waste treatment methods.

7. Handling and storage

Precautions for safe handling

Protective measures: Wear appropriate personal protective equipment (see Section 8). People with a history of skin sensitization, asthma, allergies or chronic or recurrent respiratory disease should not intervene in processes using this product. Avoid exposure - obtain special instructions before use. Do not handle until you have read and understood all safety precautions. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Do not ingest. Avoid release into the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation system is inadequate. Store in the original container or another approved substitute container made from a compatible material and kept tightly closed when not in use. Empty containers retain product residue and may present a hazard. Do not reuse this container.

Advice on general hygiene at work: Eating, drinking or smoking is prohibited in areas where this product is handled, stored or processed. Persons working with this product should wash their hands and face before eating, drinking or smoking. Also see Section 8 for further information on hygiene measures.

Safe storage conditions, including incompatibilities: Store in accordance with local regulations. Store in original container away from sunlight, in a dry, cool, well-ventilated area, away from incompatible substances (see Section 10), food and drink. Keep under lock and key. Keep container tightly closed when product is not in use. Opened containers must be carefully closed and kept upright to avoid leakage. Do not store in unlabelled containers. Use an appropriate container to avoid any contamination of the surrounding environment. See Section 10 for Incompatible Materials before handling or use.

8. Exposure controls / personal protection

Control parameters

Occupational Exposure Limits

Ingredient name	Exposure limits
PART (B) Isophorone diamine	CA Ontario Provincial (Canada, 7/2015). Absorption through skin. TWA : 3 mg/m ³ 8 hours. TWA : 0.5 ppm 8 hours.

Appropriate engineering controls: If user handling results in dust, fumes, gases, vapors, or mist, use enclosed enclosures, local exhaust ventilation, or other built-in automatic control systems to maintain the technician's exposure threshold to airborne contaminants below recommended or legal limits.

Control of the action of environmental agents: It is important to test emissions from ventilation systems and manufacturing equipment to ensure that they comply with the requirements of environmental protection legislation.

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Individual protective measures

Hygiene measures:

After handling chemicals, wash your hands, forearms and face thoroughly before eating, smoking, using the toilet and after finishing work. Make sure eyewash stations and decontamination showers are installed near workstations.

Eye/face protection:

Wearing safety glasses conforming to an approved standard is mandatory when a risk assessment recommends it to avoid exposure to liquid splashes, mist, gases or dust. If contact is possible, the following protection should be worn, unless an assessment indicates a need for higher protection: chemical safety goggles and/or face shield. If respiratory risks exist, a full face respirator may be required instead.

Hand protection:

When handling chemicals, wear impervious, chemical-resistant gloves conforming to an approved standard at all times, if a risk assessment indicates this is necessary. Taking into account the parameters indicated by the glove manufacturer, check that the gloves still maintain their protective properties during use. It should be noted that the breakthrough time for any material used in gloves may vary for different glove manufacturers. In the case of mixtures consisting of several substances, the duration of protection of the gloves cannot be assessed precisely.

Body protection:

Personal protective equipment for the body must be appropriate for the task performed and the risks involved, as well as approved by an expert before handling this product.

Further body protection:

Appropriate footwear and other appropriate skin protection measures should be selected based on the task being performed and the hazards involved and this selection should be approved by a specialist before handling this product.

Respiratory protection:

Depending on the risk and possibility of exposure, choose a respirator that meets the appropriate standard or certification. Respirators should be used following a protective program to ensure fit, proper training and usage aspects.

9. Physical and chemical properties

Basic physical and chemical properties

Physical state:	PART (A) PART (B)	Liquid Liquid
Color:	PART (A) PART (B)	Whitish Amber
Odor:	PART (A) PART (B)	Epoxy Amine
Odor threshold:	N/A	



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pH:	PART (A) PART (B)	N/A 12.4 (at 25% aq. 77 °F (25 °C))
Fusion point:	N/A	
Boiling point:	PART (A) PART (B)	N/A > 250 °C (> 482 °F)
Flash point:	PART (A) PART (B)	Closed cup: > 116 °C (> 240.8 °F) Closed cup: > 118 °C (> 244.4 °F)
Evaporation rate:	PART (A) PART (B)	0 0
Flammability (solids and gases):	N/A	
Lower and upper explosive limits (inflammation):	PART (A) PART (B)	N/A Minimum threshold: 1.1% Maximum threshold: > 6.4%
Vapor pressure:	PART (A) PART (B)	< 0.5 kPa (< 3.7503 mm Hg) [ambient temperature] > 0.7 kPa (< 5.2504 mm Hg) [ambien temperature]
Vapor density:	PART (A) PART (B)	> 1 [Air =1] 5.604 [Air =1]
Specific gravity:	PART (A) PART (B)	1.17 0.97 to 0.98
Solubility:	N/A	
Water solubility:	N/A	
Partition coefficient n-octanol/water:	N/A	
Auto-ignition temperature:	N/A	
Decomposition temperature:	N/A	
Viscosity:	N/A	
Flow time (ISO 2431) :	N/A	

10. Stability and reactivity

Reactivity: No specific reactivity testing data available for this product or its ingredients.

Chemical stability: Product is stable.

Possibility of hazardous reactions: Under normal conditions of storage and use, no hazardous reactions will occur.

Conditions to avoid: No specific data.

Incompatible materials: Reactive or incompatible with oxidizing materials.

Hazardous decomposition products: Under normal conditions of storage and use, no hazardous decomposition products should be produced.

11. Toxicological information

Information on toxicological effects

Acute toxicity

Product / ingredient name	Result	Species	Dosage	Exposure
PART (A)				
C12–C14 technical alkyl glycidyl ether	DL50 Oral	Rat	17100 mg/kg	-
Amorphous silica, sublimated	DL50 Oral	Rat	3160 mg/kg	-
PART (B)				
Isophorone diamine	DL50 Cutaneous	Rabbit	805 mg/kg	-
	DL50 Oral	Rat	2500 mg/kg	-

Irritation / corrosion

Product / ingredient name	Result	Species	Potential	Exposure	Observation
PART (A)					
C12–C14 technical alkyl glycidyl ether	Skin – moderately irritating	Rabbit	-	24 h 500 µl	-
PART (B)					
Cyclohexanemethanamine,5-amine-1,3,3-thimethyl	Eyes – moderately irritating	Rabbit	-	24 h 20 mg	-
	Eyes – moderately irritating	Rabbit	-	49 mg	-
	Skin – moderately irritating	Rabbit	-	24 h 5 mg	-
	Skin – moderately irritating	Rabbit	-	490 mg	-

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

There is no data available.



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Classification

Product / ingredient name	OSHA	CIRC	NTP
PART (A) Amorphous silica, sublimated	-	3	-

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Systemic toxicity to certain target organs (single exposure)

Name	Category	Target organs
PART (A) Amorphous silica, sublimated	Category 3	Respiratory tract irritation

Systemic toxicity to certain target organs (repeated exposure)

There is no data available.

Risk of absorption by aspiration

There is no data available.

Information on likely routes of exposure

Skin contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact:	Causes serious eye damage.
Inhalation:	No known significant effects or critical hazards.
Skin contact:	Causes severe burns. Can cause cutaneous allergy.
Ingestion:	No known significant effects or critical hazards.

Symptoms corresponding to physical, chemical, and toxicological characteristics

Eye contact:	Adverse symptoms may include pain, tearing, and/or redness.
Inhalation:	No known significant effects or critical hazards.
Skin contact:	Adverse symptoms may include pain and/or irritation and redness. Blisters may eventually form.
Ingestion:	Adverse symptoms may include stomach pain.

Delayed and immediate effects as well as chronic effects caused by short-and-long-term exposure

Short-term exposure

Possible immediate effects:	No known significant effects or critical hazards.
Possible delayed effects:	No known significant effects or critical hazards.

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Long-term exposure

Possible immediate effects: No known significant effects or critical hazards.

Possible delayed effects: No known significant effects or critical hazards.

Potential chronic health effects

Generalities : May cause damage to organs through repeated or prolonged exposure. Once sensitized, a strong reaction may eventually be triggered upon subsequent exposure to very low levels.

Carcinogenicity: Suspected of causing cancer. The risk of cancer depends on the duration and level of exposure.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Effects on development: No known significant effects or critical hazards.

Effects on fertility: No known significant effects or critical hazards.

Numerical toxicity values

Acute toxicity estimates

Route	ATE value
PART (A) Oral	241213.3 mg/kg
PART (B) Oral Cutaneous	2500 mg/kg 1100 mg/kg

12. Ecological information

Toxicity

Product / ingredient name	Result	Species	Exposure
PART (B) Cyclohexanemethanamine,5-amino-1,3,3-thimethyl	Acute CE50 3700 µg/l Pure water Acute CL50 33900 µg/l Pure water	Algae – Pseudokirchneriella subcapitata Daphnia – Daphnia magna	96 hours 48 hours

Persistence and degradation: There is no data available.

Bioaccumulation potential

Product / ingredient name	LogP _{ow}	BCF	Potential
PART (A) C12–C14 technical alkyl glycidyl ether	3.77	160 to 263	Low
PART (B) Cyclohexanemethanamine,5-amino-1,3,3-thimethyl	-1.66 to -1.4	-	Low

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Mobility in soil

Soil / water distribution coefficient (K_{oc}):

N/A







Other adverse effects:

No known significant effects or critical hazards.

13. Disposal considerations

Waste treatment methods: 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 local authority requirements.

14. Transport information

Classification	TDG	IMDG	IATA
UN number	UN2735	UN2735	UN2735
UN proper shipping name	CHEMICAL KITS	CHEMICAL KITS. Marine pollutant (Reaction product of epichlorohydrin & bisphenol A)	CHEMICAL KITS
Transport hazard class	8  	8  	8  
Packaging group	III	III	III
Environmental hazards	Yes	Yes	Yes. The environmentally hazardous substance mark is not required.

Other information

TDG Classification: Product classified according to the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark). The “marine pollutant” mark is not required in the case of transport by road or rail.

IMDG: The “marine pollutant” mark is not required when the substance is transported in quantities ≤ 5 l or ≤ 5 kg. Emergencies F-A, S-P

IATA: The “environmentally hazardous substance” mark may appear if required by other transport regulations.

Emergency Measures Guide (EMG): 171

Special protections for the user

Transportation with local users: Always transport in containers that are correct and secure. Ensure that people transporting the product know the steps to take in the event of an accident or accidental spill.

15. Regulatory information

Canadian lists

Canada: All components are listed or excluded.

Canadian NPRI: None of the components are listed.

Toxic substances within the meaning of CEPA (Canadian Environmental Protection Act)

None of the components are listed.

16. Other information

Classification – PART (A)	Category	Justification
Skin corrosion/skin irritation	Category 2	Calculation method
Serious eye damage/eye irritation	Category 2A	Calculation method
Skin sensitization	Category 1	Calculation method
(Long-term) danger for aquatic environments	Category 2	Calculation method
Classification – PART (B)	Category	Justification
Acute toxicity (cutaneous)	Category 4	Calculation method
Skin corrosion/irritation	Category 1B	Calculation method
Serious eye damage/eye irritation	Category 1	Calculation method
Skin sensitization	Category 1	Calculation method
(Acute) danger for aquatic environments	Category 2	Calculation method
(Long-term) danger for aquatic environments	Category 3	Calculation method

Abbreviations and acronyms

ATE= Acute toxicity estimate

BCF= Bioconcentration factor

GHS= Globally harmonized system of classification and labeling of chemicals

IATA= International Air Transport Association

IBC= Intermediate bulk containers

IMDG code= International Maritime Dangerous Goods code

LogK_{ow}= Octanol/water partition coefficient

MARPOL= International Convention for the Prevention of Pollution from Ships of 1973, as amended by the Protocol of 1978 ("MARPOL" = maritime pollution)

UN= United Nations

RDP= Regulation on dangerous products

Advice to the reader

To the best of our knowledge, the information contained in this document is accurate. However, neither the aforementioned supplier nor any of its branches can assume any responsibility whatsoever regarding the accuracy or completeness of the information contained herein. It is exclusively up to the user to determine the appropriateness of the materials.

All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that others do not exist.