

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Common Name: Eli-Bond FR/166 (Component B – Hardener)
Synonym: Not available
Trade Name: Eli-Bond FR/166
(Component B – Hardener)
Material Uses: Adhesive
Manufacturer: Eli-Chem Resins UK Ltd
212 Dunsfold Park
Canada Avenue
Cranleigh, Surrey GU6 8GA
Tel: +44 (0) 1483 266636
Email: sales@elichem.co.uk

Responsible Name: Aram Friedrich
In Case of + 44 (0) 1483 266636
Emergency: (Business hours only)

Section 2. Composition, Information on Ingredients

Substance/Preparation: Preparation

Ingredient Name	CAS Number	%	EC Number	EU/SABS 0265 Classification
Polyamino Amide	n/a	>85	-	R36/37/38
Polyamine Adduct Mixture	689-10-90-7	<20	-	Xi; R36/37/38 S16,24/25/26,28/29, 37, 44
See Section 16 for the full text of the R Phrases declared above				

* Occupational Exposure Limit(s), if available, are listed in section 8

Section 3. Hazardous Identification

The preparation is classified as not dangerous according to Directive 1999/45/EC and its amendments.

Classification: R 36/37/38
Human health hazards: Irritating to eyes, respiratory system, and skin.

See Section 11 for more detailed information on health effects and symptoms.

Section 4. First Aid Measures

Eye Contact: In cases of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.
Skin Contact: Wash skin thoroughly with soap and water or use recognized skin cleanser. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Inhalation: If inhaled, remove to fresh air. Get medical attention if symptoms appear.
Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately.
Notes to Physician: No specific treatment, treat symptomatically.

See Section 11 for more detailed information on health effects and symptoms.

Section 5. Fire Fighting Measures

Flammability of the Product:	May be combustible at high temperatures
Auto-ignition Temperature:	The lowest known value is 336.9°C (638.4°F) (Triethylenetetramine).
Flash Points:	The lowest known value is Closed cup: 98.9°C (210°F). Open cup: 97.9°C (208°F). (Cleveland). (Diethylenetriamine).
Flammable Limits:	Not available
Products of Combustion:	These products are carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂ ...).
Fire Hazards in Presence of Various Substances:	Slightly flammable to flammable in presence of open flames, sparks and static discharge, of heat.
Explosion Hazards in Presence of Various Substances:	None identified
Fire Fighting Media and Instructions:	In case of fire, use water spray (fog), foam, dry chemical, or CO ₂ .
Special protective Equipment for fire-fighters:	Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
Special Remarks on Fire Hazards:	When heated to decomposition, it emits toxics fumes. (Diethylenetriamine)
Special Remarks on Explosion Hazards:	No additional remark.

Section 6. Accidental Release Measures

Personal precautions:	Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Follow all fire fighting procedures (Section 5).
Environmental Precautions and Clean-up Methods:	Minimize contact of spilled material with soils to prevent runoff to surface waterways. See Section 13 for Waste Disposal Information. If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container for disposal. For large spills like spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

Note: See section 8 for personal protective equipment and section 13 for waste disposal.

Section 7. Handling and Storage

Handling:	Do not ingest. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Use suitable protective equipment (Section 8).
Storage:	Keep container tightly closed. Keep container in a cool, well-ventilated area.
Packaging materials Recommended:	Use original container.

Section 8. Exposure Controls, Personal Protection**Exposure Controls****Occupational exposure Controls:**

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Respiratory protection:	A respirator is not needed under normal and intended conditions of product use. Wear appropriate respirator when ventilation is inadequate.
Hand protection:	Rubber gloves. Neoprene gloves.
Eye protection:	Safety glasses. Goggles, face shield, or other full-face protection if potential exists for direct exposure to aerosols or splashes.
Skin protection:	Additional body garments should be used based upon the task being performed (e.g. sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces. Appropriate techniques should be used to remove potentially contaminated clothing.

Section 8. Exposure Controls, Personal Protection (Continue/...)

**Personal protective
Equipment (Pictograms):**



Occupational exposure limits:

Ingredient Name:
N/A

Occupational Exposure Limits

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid
Colour:	Clear - Amber
Odour:	Not available
Taste:	Not available
Molecular Weight:	Not applicable
Molecular Formula:	Not applicable
pH:	Basic
Boiling/Condensation Point:	The lowest known value is 207.05°C (404.7°F)
Melting/Freezing Point:	May start to solidify at 12°C (53.6°F) based on data for: Triethylenetetramine.
Critical Temperature:	The lowest known value is 459.9°C (859.8°F) (Triethylenetetramine).
Specific Gravity:	0.9 – 1.0 g/cm ³
Vapour Pressure:	The highest known value is 0.03 kPa (0.2 mmHg) (at 20°C)
Vapour Density:	The highest known value is 5.04 (Air = 1) (Triethylenetetramine).
Volatility:	Not available
Odour Threshold:	Not available
Evaporation Rate:	Not available
VOC:	Not available
Viscosity / 25°C:	38000 – 42000 mPa.s
LogK_{ow}:	The product is partly soluble in water and octanol.
Ionicity (in Water):	Not available
Dispersion Properties:	Is not dispersed in cold water, hot water.
Solubility:	Partly soluble in cold water, hot water, methanol, diethyl ether, n-octanol.
Physical Chemical Comments:	No additional remark.

Section 10. Stability and Reactivity

Stability and Reactivity:	The product is stable
Conditions of Instability:	None identified.
Incompatibility with Various Substances:	Reactive with acids.

Hazardous Decomposition**Products:****Hazardous Polymerization:**

Slightly reactive to reactive with OXIDIZING AGENTS.

These products are carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂...)

Will not occur.

Section 11. Toxicological Information**Potential Acute Health Effects****Inhalation:**

No specific hazard

Ingestion:

Ingestion may cause gastrointestinal irritation and diarrhoea.

Skin contact:

Irritating to skin. May cause sensitisation by skin contact.

Eye contact:

Irritating to eyes.

Acute toxicity**Ingredient Name****Test****Result****Route****Species**

N/A

Potential Chronic Health Effects**Ingredient Name****Carcinogenic Effects****Mutagenic Effects****Developmental toxicity****Impairs fertility**

No evidence of risk in humans

Over-exposure signs/symptoms**Target Organs:**

Contains material, which causes damage to the following organs: kidneys, liver, gastrointestinal tract, cardiovascular system, skin, eye, lens or cornea.

Other adverse effects:

None identified.

Section 12. Ecological Information**Ecotoxicity Data****Ingredient Name****Species****Period****Result****BOD and COD:**

Not available.

Biodegradable/OECD:

Not available.

Mobility:

Not available.

Products of Degradation:These products are carbon oxides (CO, CO₂) and water, nitrogen oxides (NO, NO₂...).**Toxicity of the Products****of Biodegradation:**

The products of degradation are less toxic than the product itself.

Special Remarks on the**Products of Biodegradation:**

Not available

Section 13. Disposal Considerations**Waste Disposal:**

Incinerate in a licensed high temperature hazardous waste incinerator. Dispose of according to all federal, state and local applicable regulations.

Waste Stream:

Not applicable.

Waste Classification:

Not applicable.

European Waste Catalogue (EWC):

Not applicable.

Consult your local or regional authorities.

Section 14. Transport Information

Regulatory Information	UN number	Proper shipping name	Class	Packing Group	Label	Additional information
ADR/RID/SABS 0228 Class	Not regulated					
IMDG Class	Not regulated					
IATA-DGR Class	Not regulated					

Section 15. Regulatory Information**EU / SABS 0265 Classification**

Hazard symbol(s):

Risk phrases:
Safety phrases:

Irritant
R36/37/38- Irritating to eyes, respiratory system, and skin.
S16 – Keep away from sources of ignition – No smoking
S24 – Avoid contact with skin.
S25 – Avoid contact with eyes.
S26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 – After contact with skin, wash immediately with plenty of soap.
S29 – Do not empty in drains.
S37 – Wear suitable gloves.
S44 – if you feel unwell, seek medical advice (show the label where possible)

Contains:
Product Use:

N/A
Classification and labelling have been performed according to EU directives 67/548/EEC, 1999/45/EC including amended and the intended use.
- Industrial applications.

Section 16. Other informationFull text of R phrases
referred to in Section 2
and 3:

R36/37/38- Irritating to eyes, respiratory system, and skin.

Full text of
classifications referred
to in Sections 2 and 3:

Xi; Irritant

Notice to Reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-mentioned supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Common Name:** Eli-Bond FR/166 (Component A – Resin)**Synonym:** Not available**Trade Name:** Eli-Bond FR166
(Component A – Resin)**Material Uses:** Adhesive**Manufacturer:** Eli-Chem Resins UK Ltd
212 Dunsfold Park
Canada Avenue
Cranleigh, Surrey GU6 8GA
Tel: +44 (0) 1483 266636
Email: sales@elichem.co.uk**Responsible Name:** Aram Fredrich
In Case of + 44 (0) 1483 266636
Emergency: (Business hours only)**Section 2. Composition, Information on Ingredients****Substance/Preparation:** Preparation

Ingredient Name	CAS Number	%	EC Number	EU/SABS 0265 Classification
Reaction product: bisphenol A-(epichlorohydrin)	25068-38-6	> 50	500-033-5	Xi; R36/38
Hydrocarbon Resin	71302-91-5	<20	-	R43/51/53
Non-hazardous				S16/24/25/26/29
See Section 16 for the full text of the R Phrases declared above				

* Occupational Exposure Limit(s), if available, are listed in section 8

Section 3. Hazardous Identification

The preparation is classified as not dangerous according to Directive 1999/45/EC and its amendments.

Classification: Xi; R36/38 R43/51/53**Human health hazards:** Irritating to eyes and skin.

May cause sensitisation by skin contact.

Environmental Hazards: Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.**See Section 11 for more detailed information on health effects and symptoms.****Section 4. First Aid Measures****Eye Contact:** In cases of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.**Skin Contact:** Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if symptoms appear.**Inhalation:** If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if symptoms persist.**Ingestion:** Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately.**Notes to Physician:** No specific treatment, treat symptomatically.**See Section 11 for more detailed information on health effects and symptoms.**

Section 5. Fire Fighting Measures

Flammability of the Product: May be combustible at high temperatures

Auto-ignition Temperature: Not available

Flash Points: > 200°C

Flammable Limits: Not available

Products of Combustion: These products are carbon oxides (CO, CO₂..).

Fire Hazards in Presence

of Various Substances: Slightly flammable to flammable in presence of open flame, sparks, and static discharge, of heat.

Explosion Hazards in Presence of Various

Substances: Non identified

Fire Fighting Media and

Instructions: In case of fire, use water spray (fog), foam, dry chemical, or CO₂.

Special protective

Equipment for fire-fighters: Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Special Remarks on Fire

Hazards: No additional remark.

Special Remarks on

Explosion Hazards: No additional remark.

Section 6. Accidental Release Measures

Personal precautions: Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Follow all firefighting procedures (Section 5).

Environmental Precautions

and Clean-up Methods: Minimize contact of spilled material with soils to prevent runoff to surface waterways. See Section 13 for Waste Disposal Information.

If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

Note: See section 8 for personal protective equipment and section 13 for waste disposal.

Section 7. Handling and Storage

Handling: Wash thoroughly after handling. Use suitable protective equipment (Section 8).

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Packaging materials

Recommended: Use original container.

Section 8. Exposure Controls, Personal Protection

Exposure Controls Occupational exposure

Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Respiratory protection: A respirator is not needed under normal and intended conditions of product use. Wear appropriate respirator when ventilation is inadequate.

Hand protection: Rubber gloves. Neoprene gloves.

Eye protection: Safety glasses. Goggles, face shield, or other full-face protection if potential exists for direct exposure to aerosols or splashes.

Skin protection: Additional body garments should be used based upon the task being performed (e.g. sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces. Appropriate techniques should be used to remove potentially contaminated clothing.

Section 8. Exposure Controls, Personal Protection (continue/...)

Personal protective Equipment (Pictograms):



Occupational exposure limits:

Ingredient Name: Occupational Exposure Limits

N/A

Section 9. Physical and Chemical Properties

Physical State and

Appearance: Liquid

Colour: Clear - Transparent

Odour: Not available

Taste: Not available

Molecular Weight: Not applicable

Molecular Formula: Not applicable

pH: Not applicable

Boiling/Condensation Point: Not available

Melting/Freezing Point: Not available

Critical Temperature: Not available

Specific Gravity: 1.1 – 1.15 g/cm³

Vapour Pressure: Not available

Vapour Density: Not available

Volatility: Not available

Odour Threshold: Not available

Evaporation Rate: Not available

VOC: Not available

Viscosity / 25°C: 13000 - 15000 mPa.s

LogKow: The product is insoluble in water and octanol.

Ionicity (in Water): Not available

Dispersion Properties: Is not dispersed in cold water, hot water.

Solubility: Insoluble in cold water, hot water, methanol, diethyl ether, n-octanol.

Physical Chemical

Comments: No additional remark.

Section 10. Stability and Reactivity

Stability and Reactivity: The product is stable

Conditions of Instability: None identified.

Incompatibility with Various

Substances: Reactive with acids.

Hazardous Decomposition

Products: These products are carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂...)

Hazardous Polymerization: Will not occur.

Section 11. Toxicological Information

Potential Acute Health Effects

Inhalation: No specific hazard

Ingestion: Ingestion may cause gastrointestinal irritation and diarrhoea.
Skin contact: Irritating to skin. May cause sensitisation by skin contact.
Eye contact: Irritating to eyes.

Section 11. Toxicological Information (continue/...)**Acute toxicity**

<u>Ingredient Name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
Reaction product: bisphenol A	LD50	11400 mg/kg	Oral	Rat A-(epichlorohydrin)
		LD50	13600 mg/kg	Oral
	LD50	>500 mg/kg	Oral	Mouse LD50
		>1200 mg/kg	Dermal	Rat LD50
		>1270 mg/kg	Dermal	Mouse

Potential Chronic Health Effects

<u>Ingredient Name</u>	<u>Carcinogenic</u>	<u>Mutagenic Effects</u>	<u>Developmental</u>	<u>Impairs fertility</u>
------------------------	---------------------	--------------------------	----------------------	--------------------------

Effects toxicity
No evidence of risk in humans

Over-exposure signs/symptoms

Target Organs: Contains material, which causes damage to the following organs: cardiovascular system, skin, eye lens or cornea.
Other adverse effects: None identified.

Section 12. Ecological Information**Ecotoxicity Data**

<u>Ingredient Name</u>	<u>Species</u>	<u>Period</u>	<u>Result</u>
------------------------	----------------	---------------	---------------

BOD and COD: Not available.

Biodegradable/OECD: Not available.

Mobility: Not available.

Products of Degradation: These products are carbon oxides (CO, CO₂) and water, nitrogen oxides (NO, NO₂...).

Toxicity of the Products

of Biodegradation: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The products of biodegradation are less toxic than the original product.

Special Remarks on the

Products of Biodegradation: Not expected to bioaccumulate.

Section 13. Disposal Considerations

Waste Disposal: Incinerate in a licensed high temperature hazardous waste incinerator. Dispose of according to all federal, state and local applicable regulations.

Waste Stream: Not applicable.

Waste Classification: Not applicable.

European Waste Catalogue

(EWC): Not applicable.

Consult your local or regional authorities.

Section 14. Transport Information

Regulatory Information	UN number	Proper shipping name	Class	Packing Group	Label	Additional information
ADR/RID/SABS 0228 Class	Not regulated					
IMDG Class	Not regulated					
IATA-DGR Class	Not regulated					

Section 15. Regulatory Information**EU / SABS 0265 Classification Hazard symbol(s):**

Irritant

Risk phrases: R36/38- Irritating to eyes

R43- May cause sensitisation by skin contact

R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases: S24- Avoid contact with skin. S29- Do not empty into drains S37- Wear suitable gloves.

S46- If swallowed, seek medical advice immediately and show this container or label.

Contains: Reaction product: bisphenol A-(epichlorohydrin) 500-033-5**Product Use:** Classification and labelling have been performed according to EU directives 67/548/EEC, 1999/45/EC including amended and the intended use.

- Industrial applications.

**Section 16. Other information****Full text of R phrases referred to in Section 2****and 3:** R36/37/38- Irritating to eyes, respiratory system, and skin.

R43- May cause sensitisation by skin contact.

R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications referred**to in Sections 2 and 3:** Xi- Irritant**Notice to Reader**

To the best of our knowledge, the information contained herein is accurate. However, neither the above-mentioned supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.