

FX-645 CLEAR *Brushable Aliphatic Polyurea Coating*

SAFETY DATA SHEET

1. Identification

Product Identification

Product Identifier: A Component FX-645 CLEAR
Recommended Use: Two-Component Brushable Aliphatic Polyurea Coating – Component A
Use Restrictions: For industrial use only.

Company Identification

Company: Simpson Strong-Tie Company Inc.
Address: 5956 W. Las Positas Blvd.
Pleasanton, CA 94588 USA
Phone: 1-800-999-5099
Website: www.strongtie.com
Emergency: 1-800-535-5053 (US/Canada) / 1-352-323-3500 (International)
For most current SDS, please visit our website at www.strongtie.com/sds.

2. Hazard Identification

General Information

FX-645 CLEAR is a two part system. The two parts of this product have been assessed according to GHS. This Safety Data Sheet covers hazards and responses for Component A. See Component B Safety Data Sheet for complete product information.

Component A GHS Classification



Physical Hazards:	Not Classified.	
Health Hazard:	Acute Toxicity, Inhalation	Category 4
	Skin Corrosion/Irritation	Category 2
	Serious Eye Damage/Irritation	Category 2
	Sensitization, Skin	Category 1
	Sensitization, Respiratory	Category 1
	Aspiration Hazard	Category 2
	STOT, Single Exposure	Category 3 (Respiratory Irritation, Narcotic Effects)
	STOT, Repeated Exposure	Category 2 (Lung)
Environmental Hazards:	Not Classified.	
Signal Word:	DANGER!	
Hazard Statements:	Harmful if inhaled. Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause drowsiness or dizziness. May be harmful if swallowed and enters the lungs. May cause damage to organs (lung) through prolonged or repeated exposure.	
Precautionary Statements:		
Prevention:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe mist or vapor. Use only outdoors or in a well-ventilated area. In case of inadequate ventilation wear respiratory protection. Do not eat, drink, or smoke when using this product. Wash thoroughly after handling. Contaminated clothing must not be allowed out of the workplace.	
Response:	If exposed or concerned: Call a poison center/doctor. If Inhaled: Remove victim to fresh air and keep in a rest position comfortable for breathing. If experiencing respiratory symptoms: Call poison center/doctor. If swallowed: Do NOT induce vomiting. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before re-use. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.	
Storage:	Store in a well-ventilated place. Keep container tightly closed. Keep cool.	
Disposal:	Dispose of contents/container in accordance with local/regional/national regulations.	

Hazards Not Otherwise Classified (HNOC)

None known.

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3. Composition Information

General Information

This product is a mixture. Hazardous ingredients for each component are listed below. May include other nonhazardous ingredients. May include other trace ingredients, see Section 15.

Composition – All concentrations are in percent by weight unless otherwise indicated.

Chemical Name	CAS Number	Weight %
Homopolymer of Hexamethylene Diisocyanate	28182-81-2	60-80
Propylene Carbonate	108-32-7	10-25
Hexamethylene-1,6-Diisocyanate	822-06-0	< 1

4. First-Aid Measures

General Information

Provide general supportive measures and treat symptomatically. Symptoms may be delayed. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. If exposed or concerned: Get medical advice/attention. Wash contaminated clothing before reuse.

Routes of Exposure

- Eye Contact:** Immediately flush eyes with plenty of cool water for at least 15 minutes while holding the eyes open. Remove contact lenses if present and easy to do. If redness, burning, blurred vision, or swelling persists, **consult a physician.**
- Skin Contact:** Remove contaminated clothing and product, immediately wash affected area with soap and water. Do not apply greases or ointments. If rash or irritation persists **consult a physician.**
- Ingestion:** Rinse mouth immediately. Do not induce vomiting. **Consult a physician.**
- Ingestion Note:** This material is an aspiration hazard. Potential danger from aspiration must be weighed against possible oral toxicity when decided whether to induce vomiting. All treatments should be based on observed signs and symptoms of distress.
- Inhalation:** Remove patient to fresh air. Give oxygen or artificial respiration if needed. If patient continues to experience difficulty breathing, **consult a physician.**

Most Important Symptoms

Irritant effects. Symptoms include itching, burning, redness and tearing. Central nervous system depression (drowsiness, dizziness, weakness, fatigue). Respiratory irritation, difficulty breathing, coughing.

5. Fire-Fighting Measures

- Suitable Extinguishing Media:** Extinguish with foam, carbon dioxide, dry powder, or water fog.
- Additional Information:** Do not use water jet as an extinguisher as this will spread the fire.
- Hazards during Fire-Fighting:** Closed containers may rupture violently if heated. Reacts slowly with water to produce carbon dioxide which may rupture closed containers. This reaction accelerates at higher temperatures. Burning releases isocyanate vapors and traces of hydrogen cyanide.
- Fire-Fighting Procedures:** Use standard fire-fighting procedures and consider the hazards of other involved materials. In case of fire and/or explosion do not breathe fumes. Self-contained breathing apparatus and full protective clothing must be worn. Move containers from fire area if you can do so without risk. Cool containers with flooding quantities of water until well after fire is out. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

6. Accidental Release Measures

Personal Precautions

Keep unnecessary personnel away. Eliminate all ignition sources (no smoking, flares, sparks, or open flames). Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of vapors or mists. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

Clean-Up Methods

- Small spills:** Cover spill area with suitable absorbent material. Saturate absorbent material with neutralization solution (such as a mix of 75% water, 20% soap and 5% iso-propyl alcohol) and mix. Wait 15 minutes. Collect material in open-head metal containers.

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Large spills:

Approach suspected leak areas with caution. Evacuate and ventilate the area. Stop the flow of material, if this is without risk. To minimize vapor, cover the spillage with fire-fighting foam (AFFF). Released material may be pumped into closed, but not sealed, metal container for disposal. Process can generate heat. Following product recovery, flush area with water. Prevent entry into waterways, sewer, basements or confined areas.

Environmental Precautions

Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so.

7. Handling and Storage

Handling

Mechanical ventilation or local exhaust ventilation is required. Keep workplace clean. Wear appropriate personal protective equipment. Avoid breathing mist or vapor. When using, do not eat, drink or smoke. Avoid contact with eyes, skin, and clothing. Work practice should minimize contact. Wash thoroughly after handling. Observe good industrial hygiene practices.

Storage

Prevent exposure to moisture. Store locked up. Keep in cool, dry, well-ventilated area in closed containers. Protect containers from physical damage. Store away from incompatible materials (see section 10 of the SDS). Keep in original container. Keep away from heat and sources of ignition. Keep out of the reach of children.

8. Exposure Controls / Personal Protection

Personal Protective Equipment

Protective Measure: Wear appropriate personal protective equipment.
Eye Protection: Wear chemical splash goggles or safety glasses with side shield.
Hand Protection: Wear chemical-resistant gloves such as: Nitrile, neoprene, butyl.
Skin and Body Protection: Wear long sleeve shirt/long pants and other clothing as required to minimize contact.
Respirator Protection: NIOSH or MSHA approved air-purifying respirators should be used in the context of respiratory protection program meeting the requirements of the OSHA respiratory protection standard [29 CFR 1910.134] to control exposures when ventilation or other controls are inadequate or discomfort or irritation is experienced.
General Hygiene: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Engineering Controls

If exposure limits have not been established, maintain airborne levels to an acceptable level. When using indoors good general ventilation should be used. Provide eyewash station and emergency shower.

Exposure Limits

Component	OSHA (PEL)	ACGIH (TLV)	Other
Hexamethylene-1,6-Diisocyanate (CAS 822-06-0)	N/E	N/E	0.140 mg/m ³ (Ceiling) 0.035 ppm (TWA)

9. Physical and Chemical Properties

Physical State:	Liquid	Freezing/Melting Point:	N/E
Form:	Liquid	Boiling Point:	N/E
Color:	Clear	Flash Point:	>200°F (> 93°C)
Odor:	Slight, Mild	Evaporation Rate:	N/E
Odor Threshold:	N/E	Specific Gravity:	1.25
pH:	N/E	VOC (A+B):	77 g/L
U. Flammability:	N/E	L Flammability:	N/E
Vapor Pressure:	N/E	Vapor Density:	N/E
Solubility:	Reacts slowly with water to release CO ₂ gas.	Kow:	N/E
		Viscosity:	N/E

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10. Stability and Reactivity

Reactivity:	Material reacts with water to produce CO ₂ gas. The reaction with water is very slow under 122°F but is accelerated at higher temperatures.
Chemical Stability:	Stable under normal storage conditions.
Condition to Avoid:	High heat and open flame. Protect from freezing.
Substances to Avoid:	Water, amines, strong bases, alcohols, copper alloys.
Hazardous Reactions:	During normal polymerization CO ₂ is produced. Will polymerize with heat and/or moisture. Can react with itself above 320°F (160°C).
Decomposition Products:	Fire or intense heat will decompose the product into carbon monoxide, carbon dioxide, hydrogen cyanide, oxides of nitrogen, isocyanates, isocyanic acid, and dense black smoke.

11. Toxicological Information

Likely Routes of Exposure

Ingestion:	Ingestion may cause irritation to the gastrointestinal tract. Aspiration hazard, do not induce vomiting if product is swallowed. Consult a physician.
Inhalation:	Harmful if inhaled. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. May cause damage to organs (lung) by inhalation.
Skin contact:	Causes skin irritation. May cause an allergic skin reaction.
Eye contact:	Causes serious eye irritation.

Information on Toxicological Effects

Acute toxicity: Harmful if inhaled.

Product	Species	Test Result
Homopolymer of Hexamethylene Diisocyanate (CAS 28182-81-2)		
Acute, Oral, LD50	Rabbit	>5000 mg/kg
Acute, Dermal, LD50	Rat	>2000 mg/kg
Acute, Inhalation, LC50	Rat	390-453 mg/m ³
Propylene Carbonate (CAS 108-32-7)		
Acute, Oral, LD50	Rat	>5000 mg/kg
Acute, Dermal, LD50	Rabbit	>2000 mg/kg
Subchronic, Oral, LD50	Rat	>5000 mg/kg (90 days)

Skin corrosion/irritation:	Causes skin irritation.
Eye damage/eye irritation:	Causes eye irritation.
Respiratory sensitization:	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitization:	May cause an allergic skin reaction.
Germ cell mutagenicity:	The available data does not indicate that any component present at greater than 0.1% is mutagenic or genotoxic.
Carcinogenicity:	This product is not considered to be a carcinogen by IARC, NTP, ACGIH, or OSHA.
Reproductive toxicity:	This product is not expected to cause reproductive or developmental effects.
Aspiration hazard:	May be harmful if swallowed and enters the lungs.
Specific target organ toxicity:	
Single exposure	May cause drowsiness or dizziness. May cause respiratory irritation.
Repeated exposure	Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure.

Further Information

Toxicological, ecotoxicological, physical, and chemical properties may not have been fully investigated. Hazard data above is estimated based on best available information. Some workers with certain pre-existing medical conditions such as: asthma, allergies, or impaired pulmonary and/or liver functions, or who may be particularly susceptible to this material, may be affected by exposure to this material.

12. Ecological Information

General Information

Information given is based on data on the components and the ecotoxicology of similar products. The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

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Supporting Data

Component	Species	Test Result
Homopolymer of Hexamethylene Diisocyanate (CAS 28182-81-2)		
Aquatic , Fish, LC50	Zebra Fish	>100 mg/l, 96 Hours
Aquatic , Crustacea, EC50	Daphnia magna	>100 mg/l, 48 Hours
Propylene Carbonate (CAS 108-32-7)		
Aquatic , Crustacea, EC50	Daphnia magna	>1000 mg/l, 48 Hours

Persistence and degradability: No data available.

Bioaccumulative potential: No data available.

Mobility in soil: No data available.

Other Adverse Effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this product.

13. Disposal Considerations

Waste Disposal of Substance: Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Container Disposal: Empty containers or liners may retain some product residues; follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal..

14. Transportation Information

FX-645CLEAR Component A is not regulated for transportation by the USDOT, the International Air Transportation Association (IATA), or the International Maritime Dangerous Goods Code (IMDG); check specific requirements for other regions and other shipping methods.

Additional Information

Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.

This information does not cover all specific regulatory or operational requirements of this product. The classifications for transportation may vary by container volume or different regional or national regulations.

15. Regulatory Information

United States

Federal Regulations: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D) Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Hexamethylene-1,6-Diisocyanate (822-06-0) LISTED (RQ: 100lbs)

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard Categories:				
Immediate	Delayed	Fire	Pressure	Reactivity
Yes	Yes	No	No	No

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Component	CAS	% In Blend (approx.)
Hexamethylene-1,6-Diisocyanate	800-06-0	< 1

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US. California Proposition 65: WARNING: This product contains a chemical listed by the State of California as known to cause cancer, birth defects, or reproductive harm.

Component (*Can be absorbed through the skin)	Regulation	% In Blend (approx.)	Remark
Propylene Oxide (75-56-9)	ACGIH	Trace	Carcinogenic Reproductive Harm

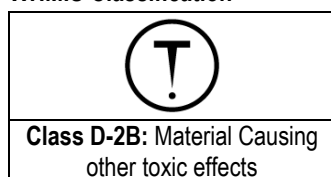
US State Right-To-Know Lists

Chemical	Massachusetts RTK	New Jersey Work and Community RTK Act	Pennsylvania Worker and Community RTK Law	Rhode Island RTK
Hexamethylene-1,6-Diisocyanate (822-06-0)	Listed	Listed	Listed	
Homopolymer of Hexamethylene Diisocyanate (CAS 28182-81-2)	Listed	Listed	Listed	

Canada

This product has been classified according to the hazard criteria of the CPR and the SDS contains all of the information required by the CPR.

WHMIS Classification



International

The product is classified and labeled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

This product is not subject to or not applicable for any of the following International Regulations; **Stockholm Convention, Rotterdam Convention, Kyoto Protocol, Montreal Protocol, Basel Convention.**

International Inventories

Country or Region	Inventory	On Inventory? (Yes/No)
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
United States	Toxic Substances Control Act (TSCA) Inventory	Yes

16. Other Information

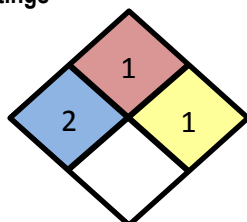
Date Prepared or Revised: January 2015

Supersedes: June 2014

Contact Simpson Strong-Tie Environmental Health and Safety at EHS@strongtie.com.

Additional Classifications

NFPA Ratings



HMIS Rating

HEALTH	2	PHYSICAL	1
FLAMMABILITY	1	PPE	B

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Abbreviations

ACGIH:	American Conference of Governmental Industrial Hygienists
CAS No.:	Chemical Abstract Service Registry Number
CERCLA:	Comprehensive Environmental Response, Compensation and Liability Act (U.S. EPA)
CPR:	Controlled Product Regulations (Canada)
DOT:	Department of Transportation (U.S.)
EPA:	Environmental Protection Agency (U.S.)
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals
HEPA:	High-Efficiency Particulate Air
HMIS:	Hazardous Materials Identification System
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association
IMDG:	International Maritime Dangerous Goods code
LPP:	Límite Permissible Ponderado (Chile)
NIOSH:	National Institute of Occupational Safety and Health (U.S.)
NFPA:	National Fire Protection Association (US)
NTP:	National Toxicology Program (US)
OSHA:	Occupational Safety and Health Administration (U.S.)
PEL:	Permissible Exposure Limit
SARA:	Superfund Amendments and Reauthorization Act (U.S. EPA)
SDS:	Safety Data Sheet
STEL:	Short Term Exposure Limit (15 minute Time Weighted Average)
STOT:	Specific Target Organ Toxicity (GHS Classification)
TLV:	Threshold Limit Value
TSCA:	Toxic Substances Control Act (U.S.)
TWA:	Time Weighted Average (exposure for 8-hour workday)
U.S.:	United States
VOC:	Volatile Organic Compounds
WHMIS:	Canadian Workplace Hazardous Materials Information System

Disclaimer

Safety Data Sheet (SDS) is prepared by Simpson Strong-Tie Co. in compliance with the requirements of OSHA 29 CFR Part 1910.1200. The information it contains is offered in good faith as accurate as of the date of this SDS. This SDS is provided solely for the purpose of conveying health, safety, and environmental information. No warranty, expressed or implied, is given. Health and Safety precautions may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations.

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FOR INTERNAL USE ONLY

A Component 645CLEAR:
XCOM3B

B Component 645CLEAR:
XCOM3B

FX-645 CLEAR *Brushable Aliphatic Polyurea Coating*

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1. Identification

Product Identification

Product Identifier: B Component FX-645 CLEAR
Recommended Use: Two-Component Brushable Aliphatic Polyurea Coating – Component B
Use Restrictions: For industrial use only.

Company Identification

Company: Simpson Strong-Tie Company Inc.
Address: 5956 W. Las Positas Blvd.
Pleasanton, CA 94588 USA
Phone: 1-800-999-5099
Website: www.strongtie.com
Emergency: 1-800-535-5053 (US/Canada) / 1-352-323-3500 (International)
For most current SDS, please visit our website at www.strongtie.com/sds

2. Hazard Identification

General Information

FX-645 CLEAR is a two part system. The two parts of this product have been assessed according to GHS. This Safety Data Sheet covers hazards and responses for Component B. See Component A Safety Data Sheet for complete product information.

Component B GHS Classification



Physical Hazards:	Not Classified.	
Health Hazards:	Acute Toxicity, Oral	Category 5
	Acute Toxicity, Dermal	Category 5
	Acute Toxicity, Inhalation	Category 4
	Skin Corrosion/Irritation	Category 2
	Serious Eye Damage/Irritation	Category 2
	Sensitization, Skin	Category 1
	STOT, Single Exposure	Category 3 (Respiratory Irritation)
Environmental Hazards:	Acute Environmental Hazard	Category 3
	Chronic Environmental Hazard	Category 3
Signal Word:	WARNING!	
Hazard Statements:	Harmful if inhaled. May be harmful if swallowed. May be harmful in contact with skin. Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction. May cause respiratory irritation. Harmful to aquatic life with long lasting effects.	
Precautionary Statements:		
Prevention:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/clothing/eye protection/face protection. Avoid breathing mist or vapor. Use outdoors or in a well-ventilated area. Do not eat, drink, or smoke when using this product. Contaminated clothing should not be allowed out of the workplace. Avoid release to the environment.	
Response:	If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If inhaled: Remove victim to fresh air and keep in a position comfortable for breathing. If swallowed: Do not induce vomiting. Get medical advice/attention if you feel unwell.	
Storage:	Store locked up. Store in a well-ventilated place.	
Disposal:	Dispose of contents/container in accordance with local/regional/national regulations.	

Hazards Not Otherwise Classified (HNOC)

None known.

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3. Composition Information

General Information

This product is a mixture. Hazardous ingredients for each component are listed below. May include other nonhazardous ingredients. May include other trace ingredients, see Section 15.

Composition – All concentrations are in percent by weight unless otherwise indicated.

Chemical Name	CAS Number	Weight %
Tetraethyl-N,N'-(methylenedicyclohexane-4,1-diyl)bis-DL-aspartate	136210-30-5	60-90
Bis(4-(1,2-bis(ethoxycarbonyl)ethylamino)-3-methylcyclohexyl)methane	136210-32-7	10-30
Diethyl Fumarate	623-91-6	1-10

4. First-Aid Measures

General Information

Provide general supportive measures and treat symptomatically. Symptoms may be delayed. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. If exposed or concerned: Get medical advice/attention. Wash contaminated clothing before reuse.

Routes of Exposure

- Eye Contact:** Immediately flush eyes with plenty of cool water for at least 15 minutes while holding the eyes open. Remove contact lenses if present and easy to do. If redness, burning, blurred vision, or swelling persists, **consult a physician.**
- Skin Contact:** Remove contaminated clothing and product, immediately wash affected area with soap and water. If rash or irritation persists **consult a physician.**
- Ingestion:** Rinse mouth immediately. Do NOT induce vomiting. **Consult a physician.**
- Inhalation:** Remove patient to fresh air. Give oxygen or artificial respiration if needed. If patient continues to experience difficulty breathing, **consult a physician.**

Most Important Symptoms

Irritant effects. Symptoms include itching, burning, redness, and tearing. Respiratory irritation; coughing, wheezing, shortness of breath.

5. Fire-Fighting Measures

- Suitable Extinguishing Media:** Water fog, carbon dioxide, dry chemical powder, aqueous foam.
- Additional Information:** None known.
- Hazards during Fire-Fighting:** Irritating and toxic fumes may be produced at high temperature. Hazardous gases/vapors produced are carbon monoxide, carbon dioxide, oxides of nitrogen, cyanide, aldehydes, and miscellaneous hydrocarbons. Do not allow run-off to enter drains or water courses.
- Fire-Fighting Procedures:** Use standard fire-fighting procedures and consider the hazards of other involved materials. In case of fire and/or explosion do not breathe fumes. Self-contained breathing apparatus and full protective clothing must be worn. Move containers from fire area if you can do so without risk. Cool containers with flooding quantities of water until well after fire is out. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

6. Accidental Release Measures

Personal Precautions

Keep unnecessary personnel away. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of vapors or mists. Local authorities should be advised if significant spillages cannot be contained.

Clean-Up Methods

- Small spills:** Wipe up with absorbent material (e.g. cloth, fleece). Place in leak-proof containers. Seal tightly for proper disposal. Clean surface thoroughly to remove residual contamination.
- Large spills:** Stop the flow of material, if this is without risk. Dike far ahead of spill to contain material. Use a non-combustible material like vermiculite, sand or earth to soak up the product. Place in leak-proof containers. Seal tightly for proper disposal. Following product recovery, flush area with water.

Environmental Precautions

Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so.

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7. Handling and Storage

Handling

Wear appropriate personal protective equipment. Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Avoid breathing fumes or vapors. When in use do not eat, drink, or smoke. Wash thoroughly after handling. Wash contaminated clothing before reuse. Avoid contact during pregnancy/while nursing. Avoid prolonged exposure. Observe good industrial hygiene practices.

Storage

Store locked up. Store in a closed container away from incompatible materials. Keep in original container, keep container tightly closed. Store in a cool, dry place out of direct sunlight. Keep away from heat and sources of ignition. Protect from physical damage.

8. Exposure Controls / Personal Protection

Personal Protective Equipment

Protective Measure:	Wear appropriate personal protective equipment.
Eye Protection:	Wear chemical splash goggles or safety glasses with side shield.
Hand Protection:	Wear chemical-resistant gloves such as: Nitrile, neoprene, butyl.
Skin and Body Protection:	Wear long sleeve shirts/long pants and other clothing as required to minimize contact.
Respirator Protection:	The use of a respirator is not required during normal use of this product in properly ventilated areas. An approved respirator should be worn whenever workplace conditions warrant respirator use, or when grinding or cutting cured product.
General Hygiene:	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Engineering Controls

When using indoors good general ventilation should be used. Ventilation rates should be matched to conditions. Provide eyewash station.

Exposure Limits

No exposure limits noted for ingredients.

9. Physical and Chemical Properties

Physical State:	Liquid	Freezing/Melting Point:	N/E
Form:	Liquid	Boiling Point:	N/E
Color:	Clear	Flash Point:	212°F (100°C)
Odor:	Ammonia	Evaporation Rate:	N/E
Odor Threshold:	N/E	Specific Gravity:	1.07
pH:	N/E	VOC(A+B):	77 g/L
Flammability:	N/E	U/L Flammability:	N/E
Vapor Pressure:	N/E	Vapor Density:	N/E
Solubility:	Insoluble	Kow:	N/E
Decomposition:	N/E	Viscosity:	N/E

10. Stability and Reactivity

Reactivity:	This product is stable and non-reactive under normal conditions.
Chemical Stability:	Stable under normal storage conditions.
Condition to Avoid:	High heat and open flame.
Substances to Avoid:	Oxidizing agents and acids.
Hazardous Reactions:	Hazardous polymerization will not occur.
Decomposition Products:	Carbon dioxide, carbon monoxide, oxides of nitrogen and other organic compounds.

11. Toxicological Information

Likely Routes of Exposure

Ingestion:	May be harmful if swallowed. Ingestion may cause irritation to the gastrointestinal tract.
Inhalation:	Harmful if inhaled. May cause respiratory irritation.
Skin contact:	May be harmful in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
Eye contact:	Causes serious eye irritation.

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Information on Toxicological Effects

Acute toxicity: Harmful if inhaled. May be harmful if swallowed and in contact with skin.

Component	Species	Test Result
Tetraethyl-N,N'-(methylenedicyclohexane-4,1-diyl)bis-DL-aspartate (CAS 136210-30-5)		
Acute, Dermal , LD50	Rabbit	>2000 mg/kg
Acute, Oral , LD50	Rat	>2000 mg/kg
Acute, Inhalation , LC50	Rat	4224 mg/m ³ , 4 Hours
Bis(4-(1,2-bis(ethoxycarbonyl)ethylamino)-3-methylcyclohexyl)methane (CAS 136210-32-7)		
Acute, Dermal , LD50	Rabbit	>2000 mg/kg
Acute, Oral , LD50	Rat	>2000 mg/kg
Acute, Inhalation , LC50	Rat	4224 mg/m ³ , 4 Hours
Diethyl Fumarate (CAS 623-61-6)		
Acute, Oral , LD50	Rat	1300 mg/kg

Skin corrosion/irritation: Causes skin irritation.
Eye damage/eye irritation: Causes serious eye irritation.
Respiratory sensitization: No data available.
Skin sensitization: May cause skin sensitization by contact.
Germ cell mutagenicity: The available data does not suggest that any components of this product present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity: This product is not considered to be a carcinogen by IARC, NTP, ACGIH, or OSHA.
Reproductive toxicity: This product is not expected to cause reproductive or developmental effects.
Aspiration hazard: No data available.
Specific target organ toxicity:
Single Exposure: May cause respiratory irritation.
Repeated Exposure: No data available.

Further Information

Toxicological, ecotoxicological, physical, and chemical properties may not have been fully investigated. Hazard data above is estimated based on best available information. Some workers with certain pre-existing medical conditions such as: asthma, allergies, or impaired pulmonary and/or liver functions, or who may be particularly susceptible to this material, may be affected by exposure to this material.

12. Ecological Information

General Information

Information given is based on data on the components and the ecotoxicology of similar products. The product is classified as harmful to aquatic life with long lasting effects. Avoid release to the environment.

Supporting Data

Component	Species	Test Result
Tetraethyl-N,N'-(methylenedicyclohexane-4,1-diyl)bis-DL-aspartate (CAS 136210-30-5)		
Aquatic , Fish, LC50	Zebra Fish	66 mg/l, 96 Hours
Aquatic , Crustacea, EC50	Daphnia magna	88.6 mg/l, 48 Hours
Diethyl Fumarate (CAS 623-61-6)		
Aquatic , Fish, LC50	Fathead Minnow	38 mg/l, 96 Hours

Persistence and degradability: No data available.
Bioaccumulative potential: No data available for the product.
Mobility in soil: No data available.

Other Adverse Effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this product.

13. Disposal Considerations

Waste Disposal of Substance: Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national regulations.

FX-645 CLEAR *Brushable Aliphatic Polyurea Coating*

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Container Disposal:

Empty containers or liners may retain some product residues; follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transportation Information

FX-645CLEAR Component B is not regulated for transportation by the USDOT, the International Air Transportation Association (IATA), or the International Maritime Dangerous Goods Code (IMDG); check specific requirements for other regions and other shipping methods.

Additional Information

Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.

This information does not cover all specific regulatory or operational requirements of this product. The classifications for transportation may vary by container volume or different regional or national regulations.

15. Regulatory Information

United States

Federal Regulations: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D) Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4) Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard Categories:				
Immediate	Delayed	Fire	Pressure	Reactivity
Yes	No	No	No	No

SARA 302 Extremely hazardous substance No
SARA 311/312 Hazardous chemical Yes
SARA 313 (TRI reporting) Not regulated.

US State Right-To-Know Lists


Chemical	Massachusetts RTK	New Jersey Work and Community RTK Act	Pennsylvania Worker and Community RTK Law	Rhode Island RTK
CAS 136210-30-5	Listed	Listed	Listed	
CAS 136210-32-7	Listed	Listed	Listed	
Diethyl Fumarate (CAS 623-61-6)	Listed	Listed	Listed	

This product does not contain any chemicals known to the State of California to cause cancer or reproductive harm as per **California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)**.

Canada

This product has been classified according to the hazard criteria of the CPR and the SDS contains all of the information required by the CPR.

WHMIS Classification


Class D-2B: Material Causing other toxic effects

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International

The product is classified and labeled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

This product is not subject to or not applicable for any of the following International Regulations; **Stockholm Convention, Rotterdam Convention, Kyoto Protocol, Montreal Protocol, Basel Convention.**

International Inventories

Country or Region	Inventory	On Inventory? (Yes/No)
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

16. Other Information

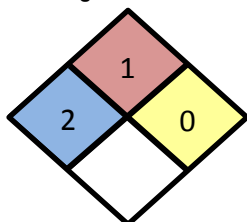
Date Prepared or Revised: January 2015

Supersedes: June 2014

Contact Simpson Strong-Tie Environmental Health and Safety at EHS@strongtie.com.

Additional Classifications

NFPA Ratings



HMIS Rating

HEALTH	2	PHYSICAL	0
FLAMMABILITY	1	PPE	B

Disclaimer

Safety Data Sheet (SDS) is prepared by Simpson Strong-Tie Co. in compliance with the requirements of OSHA 29 CFR Part 1910.1200. The information it contains is offered in good faith as accurate as of the date of this SDS. This SDS is provided solely for the purpose of conveying health, safety, and environmental information. No warranty, expressed or implied, is given. Health and Safety precautions may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations.

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A Component 645CLEAR:
XCOM3B

B Component 645CLEAR:
XCOM3B