FSTR Technologies
381 Bridgepoint Way
South Saint Paul, MN 55075

Safety Data Sheet

FSTR30 (Component A – ISO)

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	:	FSTR 30 Construction Adhesive – Part A
Recommended use	:	Part of construction adhesive system
Company	:	FSTR Technologies
Address	:	381 Bridgepoint Way South Saint Paul, MN 55075
Phone	:	651-717-4386
Emergency Telephone Numbers	:	Chem-Tel: 800-255-3924
Restrictions on use	:	For professional or industrial use only

2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity	4
Skin irritation	2
Eye irritation	2B
Respiratory sensitizer	1
Skin sensitizer	1
Specific organ toxicity – single exposure	3
Specific organ toxicity – repeated exposure	1

Danger

Hazard Statements

H332	Harmful if inhaled.
H315	Causes skin irritation.
H320	Causes eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H372	Causes damage to organs (*respiratory system*) through prolonged or repeated exposure (*inhalation*).

Precautionary statements:

Wear protective gloves
Wash skin thoroughly after handling.
Keep away from flames and hot surfaces. No smoking.
Avoid breathing dust, fume, gas, vapors or spray. Use outdoors or only in well ventilated area. In case of inadequate ventilation wear respiratory protection.
Do not eat, drink or smoke when using this product.
Contaminated clothing must not be allowed out of the workplace.

Response statements:

If swallowed: Rinse mouth. Call a poison center or doctor/physician if you feel unwell.
If on skin: Rinse skin with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Remove contaminated clothing and wash before reuse.
If inhaled: If breathing is difficult, remove person to fresh air and keep at rest in a comfortable position for breathing. If experiencing respiratory symptoms or if you feel unwell: Contact a doctor or medical professional.
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. Store locked up.
Disposal: Dispose of contents and container in accordance with existing federal, state and local environmental control laws.

Section 3. Composition / Information on Ingredients

This product is a mixture.

Hazardous Components

CAS Number	Chemical Name	Concentration
39420-98-9	Polyurethane prepolymer	30-60%
101-68-8	4,4'-Diphenylmethane Diisocyanate	20-30%
9016-87-9	Polymeric Diphenylmethane Diisocyanate	10-15%
26447-40-5	Diphenylmethane Diisocyanate mixed isomers	7-14%

Specific chemical identities and exact percentages may have been withheld as a trade secret or CBI in compliance with 29 CFR 1910.1200 (i).

4. First Aid Measures

General Advice	Take proper precautions to ensure your own health and safety before attempting rescue or administering first aid. Wear protective clothing and gloves. See section 8 for recommendations. Remove contaminated clothing. Move to a well ventilated area or outdoors.
Skin Contact	After contact with skin, wash immediately with plenty of soap and water. Get medical attention if irritation or rash develops. Wash clothing before reuse. Clean shoes thoroughly before reuse. An MDI study has demonstrated that a polyglycol based skin cleanser or corn oil may be more effective than soap and water.
Inhalation	If inhaled, move affected persons to fresh air. If not breathing, give artificial respiration. Get medical attention immediately. Treatment is symptomatic for primary irritation or bronchospasm. If breathing is labored, qualified personnel should administer oxygen.
Ingestion	If swallowed, get medical attention immediately. Wash out mouth with water. DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Most important symptoms and effects (acute and delayed)	Most important symptoms and effects are described in section 2 and/or section 11. *Diphenylmethane Diisocyanate (MDI) vapors or mist at levels above the TLV or PEL can irritate the respiratory tract (nose, throat, lungs). Respiratory sensitization may result in allergic or asthmatic like symptoms including difficulty breathing, coughing, shortness of breath and wheezing. These symptoms may be delayed several hours after exposure. These effects are usually reversible. Persons with a preexisting bronchial hyper-reactivity to MDI may respond to levels below the TLV or PEL with similar asthmatic like symptoms. Exposure to high vapor concentrations of heavy aromatic solvents can cause central nervous system depression, dizziness, light headedness, headache, nausea, and loss of coordination.*
Notes to Physician	Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Specific antidotes or neutralizers to isocyanates do not exist. Potential for chemical pneumonitis,

treat appropriately.

5. Firefighting Measures

Suitable Extinguishing Media	Dry chemical, Carbon Dioxide (CO2), alcohol resistant foam, water fog.
Not Suitable Extinguishing Media	Avoid high volume water jet, may spread fire.
Special exposure hazards	In a fire or if heated, a pressure increase will occur and the container may burst. Produces oxides of carbon and nitrogen as well as isocyanates. Combustion products may be toxic and/or irritating. Avoid smoke.
Special protective equipment for fire-fighters	Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. PVC boots, gloves, safety helmet and protective clothing should be worn.
Special remarks on explosion hazards	Due to reaction with water producing CO2 gas, a hazardous build-up of pressure could result if contaminated containers are re-sealed. Containers may burst if overheated.

6. Accidental Release Measures

Personal protection	Immediately contact emergency personnel. Isolate the area. Keep upwind avoiding inhalation of vapors. Clean up should only be performed by trained personnel. People dealing with major spillages should wear full protective clothing including respiratory protection. Use suitable protective equipment (see section 8).
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Methods for cleaning up	Contain and adsorb large spillages onto an inert, non-flammable adsorbent carrier (such as earth, vermiculite or sand). Shovel into open-top drums or plastic bags for further decontamination if necessary. Do not tightly seal containers as pressure from generated gases may result in container rupture. Wash the spillage area clean with liquid decontaminant. Test atmosphere for MDI. Neutralize small spillages with decontaminant. Remove and properly dispose of residues (see section 13). Notify applicable government authorities if release is reportable. The CERCLA for 4,4-MDI is 5,000 lbs. (see CERCLA information in section 15).

7. Handling and Storage

Handling	Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do no ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material. Keep tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Storage	Keep container in a cool, well-ventilated area. Keep container tightly closed. Keep away from moisture. Due to reaction with water producing CO2 gas, a hazardous build-up of pressure may result if contaminated containers are resealed. Do not reseal contaminated containers. Uncontaminated containers, free of moisture, may be resealed only after placing under a nitrogen blanket. Do not store in containers made of copper, copper alloys or galvanized surfaces.

Safe storage temperature	60 - 100° F

8. Exposure Controls / Personal Protection

Exposure Limits

CAS Number	Component	Value type	Limit / Standard	Notes	Source
101-68-8	4,4'-Diphenylmethane Diisocyanate	TWA	0.005 ppm		ACGIH
101-68-8	4,4'-Diphenylmethane Diisocyanate	CLV	0.02 ppm, 0.2 mg/m3		OSHA Z1

Preventive Measures	Conditions of use, adequacy of engineering or other control measures and actual exposures will dictate the need for specific protective devices at your workplace. Medical supervision of all employees who handle or come in contact with respiratory sensitizers is recommended. Persons with respiratory problems including asthmatic-type conditions, chronic bronchitis, or other chronic respiratory diseases or recurrent skin eczema or skin allergies should be evaluated for their suitability of working with this product. Once a person is diagnosed as sensitized, no further exposure to the material that caused the sensitization should be permitted.
Engineering Controls	Use local exhaust ventilation to maintain airborne concentrations below the TLV. Suitable respiratory equipment should be used in cases of insufficient ventilation or where operational procedures demand it. For guidance on engineering control measures refer to publications such as the ACGIH current edition of 'Industrial Ventilation, a manual of Recommended Practice.'
Personal Protection	
Eyes	Chemical safety goggles. If there is a potential for splashing, use a full face shield.
Skin	Protective clothing should be selected and used in accordance with 'Guidelines for the Selection of Chemical Protective Clothing' published by ACGIH.
Respiratory	When the product is sprayed or heated without adequate ventilation, an approved MSHA/NIOSH positive pressure, supplied-air respirator may be required. Air purifying respirators equipped with organic vapor cartridges and a HEPA (P100) particulate filter may be used under certain conditions when a cartridge change-out schedule has been developed in accordance with OSHA respiratory protection standard (29 CFR 1910.134).
Hands	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products. Nitrile rubber has shown good results. Thin latex or vinyl disposable gloves should be avoided. Consult with producers of protective gloves for suitability.
Other Protection	Consult your supervisor or S.O.P. for special handling instructions.

9. Physical and Chemical Properties

General Information	
Physical state	Liquid
Color	Clear brown
Odor	Musty
Odor Threshold	Not available
pH	Not available
Boiling point	> 400 °F
Melting point	Not available
Flash point	> 420 °F PMCC
Explosive properties	Non-explosive in the presence of the following materials or conditions: Open flames, sparks and static discharge and shocks and mechanical impacts.

Auto-ignition temperature	No data available
Evaporation Rate	Very slow
Solubility	Insoluble in water, reacts slowly releasing carbon dioxide gas
Partition Coefficient	No data available
Decomposition temperature	No data available
Relative density	1.1
Vapor pressure	<0.00001 mmHg @ 25C
Vapor density	Not Available
Viscosity	5 – 15 cps
VOC content	Not Available

10. Stability and Reactivity

Stability and reactivity	Stable at room temperature. Reaction with water (moisture) produces CO2 gas. Exothermic reaction with materials containing active hydrogen groups. This product is insoluble with water and moisture laden air. It will react with water slowly at the interface creating a solid water-insoluble layer of polyurea and liberating carbon dioxide gas.
Conditions of instability	Avoid high temperatures.
Incompatibility with various substances	Water, alcohols, amines, bases and acids.
Hazardous polymerization	Polymerization may occur with incompatible reactants, especially strong bases (alkalies, tertiary amines, metal salts), water, or temperatures over 160°C (320°F).
Hazardous decomposition products	Combustion products may include: carbon oxides (CO, CO2), nitrogen oxides (NO, NO2…), hydrocarbons and other undetermined components.

11. Toxicological Information

No product specific toxicological information is available. Data obtained on components are summarized below.

Component	
01-68-8 9016-87-9	4,4'-Diphenylmethane Diisocyanate (MDI) Polymeric Diphenylmethane Diisocyanate (pMDI) Likely routes of exposure: Skin contact, Inhalation, eye contact
Acute Toxicity	*Inhalation:* At room temperature vapors are expected to be minimal due to the low vapor pressure (ability to evaporate) of both MDI and pMDI. MDI vapors or mists above the TLV or PEL can result in irritation of the respiratory tract (nose, throat, lungs). Symptoms include runny nose, shortness of breath, coughing or wheezing, chest tightness or difficulty breathing. *Oral:* Low toxicity if swallowed, may irritate the digestive system if large amounts are swallowed. Oral: LD50: rat, > 2000 mg/kg Inhalation: LC50: rat, 2 mg/l, aerosol Dermal: LD50: rabbit, > 9400 mg/kg
Skin Corrosion Skin Irritation	Repeated exposure may cause allergic type reactions including rash, itching, irritation and redness. Skin contact is unlikely to result in absorption of significant amounts. Cured material can be difficult to remove.
Eye Damage Eye Irritation	Causes eye irritation, swelling and redness. May cause temporary corneal injury. Draize test, rabbit, result: irritation
Respiratory or Skin sensitization	*Respiratory Sensitizer:* Concentrations above the TLV or PEL can cause allergic symptoms including asthma attack, bronchitis, bronchial spasms, and pulmonary edema. These symptoms can be delayed for several hours after exposure. These effects are usually reversible although decreased lung function has been associated with overexposure to isocyanates. Persons with a preexisting sensitivity to isocyanates may react to levels below the TLV or PEL. Use of this product in a manner consistent with the recommended application procedures and current exposure guidelines is expected to protect against these effects

	reported for MDI. *Skin Sensitization:* Some animal research studies have associated prolonged or repeated skin contact with skin sensitization and a possible role in respiratory isocyanate sensitization. Buehler test, guinea pig, result: sensitizing
Carcinogenicity	Polymeric MDI has been classified as IARC Group 3. There is inadequate evidence to describe its carcinogenetic potential. Chronic exposure studies involving animals at very high exposure levels (6 mg/kg for lifetime) resulted in tumor formation. Polymeric MDI is not considered a human carcinogen as defined by the IARC, NTP, or OSHA. Other components of this product are not considered human carcinogens as defined by the IARC, NTP, or OSHA.
Germ Cell Mutagenicity	No effects observed
Reproductive toxicity	No effects observed
Target Organ Systematic Toxicity – Single Exposure	No data available
Target Organ Systematic Toxicity – Repeated Exposure	Irritation to lungs and nasal cavity. Tissue injury in the upper respiratory tract has been observed in laboratory animals repeatedly exposed to excessive levels of pMDI / MDI aerosol.
Aspiration Toxicity	No data available

12. Ecological Information

No product specific ecological information is available. Data obtained on components are summarized below.

Component	
01-68-8 9016-87-9	4,4'-Diphenylmethane Diisocyanate (MDI) Polymeric Diphenylmethane Diisocyanate (pMDI)
Persistence and degradability	In aquatic environments these components react with water to create carbon dioxide gas and insoluble polyureas. In atmospheric environments material has a short tropospheric half-life. Not degradable. Not considered persistent.
Mobility	No data available
Bioaccumulation	Not considered to be bio-accumulative
Ecotoxicity effects	No considered to be toxic
Aquatic toxicity	Not considered dangerous to aquatic species

13. Disposal Considerations

Waste disposal	The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-product should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Contaminated containers should be emptied. Do not reuse containers. Do not burn or use a cutting torch on empty containers.
U.S. EPA RCRA	EPA resource recovery act (RCRA) composite list of hazardous wastes and Appendix VIII Hazardous constituents (40 CFR 261): Under RCRA, it is the responsibility of the person who generates a solid waste to determine if that waste is a hazardous waste as defined by 40 CFR 261.2.

14. Transportation Information

Regulatory Information	UN Number	Proper Shipping Name	Class	PG*	Label	Additional information
DOT Classification	Not regulated					

TDG Classification	Not regulated					
IMDG Class	Not regulated					
IATA-DGR Class	Not regulated					

15. Regulatory Information

United States Federal Regulations	
U.S. Toxic Substances Control Act (TSCA 8b)	All components are listed or exempted.
CERCLA – reportable quantity, calculated	5,000 lbs. 101-68-84, MDI 5,000 lbs. 9016-87-9, Polymeric MDI
SARA 304 Extremely Hazardous Substances RQ	Does not contain any components subject to 304 EHS RQ
SARA 311 / 312	Acute health hazard Chronic health hazard
EPA Community Right To Know Act (EPCRA) SARA Title III Section 313, components requiring notification.	101-68-84, 4-Diphenylmethane Diisocyanate 9016-87-9, Polymeric Diphenylmethane Diisocyanate
Clean Air Act, Components listed as HAP	None
Clean Water Act, Section 311, Table 116.4A	None
Clean Water Act, Section 311, Table 117.3	None
Clean Water Act, Section 307	None
California Prop 65	None
DRC Conflict materials	Based upon information from our suppliers this product is "DRC Conflict Free" as defined by the SEC Conflict Minerals Final Rule.

16. Other Information

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, *NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.*

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERIMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

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