CRACK-PAC® FLEX-H_2O™ *Polyurethane Crack Sealer*
SAFETY DATA SHEET

1. Identification

Product Identification

Product Identifier: **CRACK-PAC® FLEX-H_2O™ (CPFH09, CPFH09KT, FH05-Ultra)**
Recommended Use: Polyurethane Sealant Adhesive
Use Restrictions: None Known.

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

CRACK-PAC® FLEX-H_2O Polyurethane Sealant Adhesive is a two part system. The two parts of this product have been assessed according to GHS and are classified below. The final hardened material is considered nonhazardous.

Resin (clear/yellow side) GHS Classification

Physical Hazards: Not Classified.

Health Hazards

Acute Toxicity, Inhalation	Category 4
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Irritation	Category 2
Sensitization, Respiratory	Category 1
Sensitization, Skin	Category 1
Carcinogenicity	Category 2
STOT, Single Exposure	Category 3 (respiratory tract irritation)
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. Suspected of causing cancer. May cause respiratory irritation. 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. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Response: If exposed or concerned: Get medical advice/attention. 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 person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center/doctor. If on skin: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Get medical advice/attention if you feel unwell.

Storage: Store locked up. Store in a well-ventilated place. Keep container tightly closed.

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

Accelerant (green side) GHS Classification

Physical Hazards:	Flammable Liquid	Category 4
Health Hazards	Acute Toxicity, Oral	Category 4
	Skin Corrosion/Irritation	Category 1C
	Serious Eye Damage/Irritation	Category 1
	Sensitization, Skin	Category 1
	STOT, Single Exposure	Category 3 (respiratory tract irritation)
	STOT, Repeated Exposure	Category 2
Environmental Hazards:	Not Classified.	

Signal Word: **DANGER!**

Hazard Statements: Combustible liquid. Harmful if swallowed. Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause respiratory irritation. May cause damage to organs 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. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not breathe mist or vapor. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response: If swallowed: Rinse mouth. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before re-use.

Storage: Store locked up. Store in a well-ventilated place. Store between 45-90°F (7-32°C).

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

Hazards Not Otherwise Classified (HNOC)

None known.

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.

Resin (clear/yellow side)

Chemical Name	CAS Number	Weight %
MDI Prepolymer	96328-90-4	40-60
Propanoic Acid, ester	6846-50-0	10-25
Diphenylmethane Diisocyanate, mixed Isomers	26447-40-5	< 15
Methylene Biphenyl Isocyanate	101-68-8	< 15
Polymeric Diphenylmethane Diisocyanate	9016-87-9	< 10

Accelerant (green side)

Chemical Name	CAS Number	Weight %
Tertiary Amine	N/A	20-40
Tin Mercaptide	N/A	< 15

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 skin irritation persists **consult a physician.**

Ingestion: Rinse mouth immediately. Give large amounts of milk or water, if person is conscious. Do NOT induce vomiting. **Consult a physician.**

Inhalation: Move injured person into fresh air, keep calm and under observation. For breathing difficulties, oxygen may be necessary. In case of persistent throat irritation or coughing: **Consult a physician** and take along these instructions.

Most Important Symptoms

Sensitization. Rash. Dermatitis. Isocyanates may react with skin protein and moisture to cause itching, redness, swelling, scaling or blistering. The symptoms of asthma often do not become manifest until a few hours have passed and they are aggravated by physical effort. Corrosive effects. Vapors may irritate throat and respiratory system and cause coughing. Prolonged exposure may cause chronic effects.

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. Product reacts slowly with water to produce carbon dioxide which may rupture closed containers. This reaction accelerates at higher temperatures. Irritating and toxic gases/fumes may be released during a fire. Water run-off can cause environmental damage.

Fire-Fighting Procedures: In case of fire and/or explosion do not breathe fumes. Self-contained breathing apparatus and full protective clothing must be worn. In case of fire and/or explosion do not breathe fumes. 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 flames in immediate area). 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: Soak up with absorbent material such as clay, sand or other suitable non-reactive material. Place in leak-proof containers. Seal tightly for proper disposal. Move to outside well-ventilated area. Treat with 10 parts decontamination solution to 1 part isocyanate. Mix well. Allow to stand uncovered for 48 hours before disposal.

Large spills: Approach suspected leak areas with caution. Evacuate and ventilate the area. Create a dike or trench to contain material. Use self-contained breathing apparatus and chemically protective clothing. Soak up with absorbent material such as clay, sand or other suitable non-reactive material. Place in leak-proof containers. Seal tightly for proper disposal. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Move to outside well-ventilated area. Treat with 10 parts decontamination solution to 1 part isocyanate. Mix well. Allow to stand uncovered for 48 hours before disposal. Clean spill area with decontamination solution and allow to stand for 15 minutes before removal. Test atmosphere for MDI.

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

Keep away from open flames, hot surfaces and sources of ignition. No smoking. Mechanical ventilation or local exhaust ventilation is required. Persons already sensitized to diisocyanates may develop allergic reactions when using this product. Work practice should minimize contact. Keep the workplace clean. Avoid any exposure. Wear appropriate personal protective equipment. When using, do not eat, drink or smoke. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Observe good industrial hygiene practices.

Storage

Keep container tightly closed. Store in a cool, dry place. Store between 45-90°F (7-32°C). Closed containers may rupture violently if heated. Keep away from heat, sparks and open flame. Do not store in direct sunlight. Protect against physical damage. Protect from moisture. Do not reseal if contaminated. After container has been opened, blanket with nitrogen before resealing. Keep out of the reach of children.

8. Exposure Controls / Personal Protection

Personal Protective Equipment

General Protection: Wear appropriate personal protective equipment.
Eye Protection: Wear chemical splash goggles or safety glasses with side shield.
Hand Protection: Use disposable gloves protecting against isocyanates along with cotton gloves closest to the skin. Nitrile rubber gloves are recommended
Skin and Body Protection: Wear long sleeve shirts/long pants and other clothing as required to minimize contact.
Respirator Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
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

Mix and prepare in a place with efficient exhaust ventilation. Mechanical ventilation or local exhaust ventilation is recommended. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and emergency shower.

Exposure Limits

The product is corrosive. Strict risk management is to be applied to prevent exposure of industrial or professional workers.

Component	OSHA (PEL)	ACGIH (TLV)	NIOSH Pocket Guide
Methylene Bisphenyl Isocyanate (101-68-8)	0.2 mg/m^3(Ceiling) 0.02 ppm (Ceiling)	0.005 ppm	0.2 mg/m^3(Ceiling) 0.05 mg/m^3(TWA)
Polymeric diphenylmethane diisocyanate (9016-87-9)	0.2 mg/m^3(Ceiling) 0.02 ppm (Ceiling)	.005 ppm	0.2 mg/m^3(Ceiling) 0.05 mg/m^3(TWA)

Additional Information

After Cure: Product forms an innocuous solid. Processing after cure (grinding or cutting) may produce dust containing compounds that present an inhalation hazard.

9. Physical and Chemical Properties

Property	Resin	Accelerant
Physical State:	Liquid	Liquid
Color:	Clear/Light Yellow	Green
Odor:	Slightly musty	Mild Amine
pH:	No data	10

Flammability limit – lower %:	No data	No data
Flammability limit – upper %:	No data	No data
Vapor Pressure:	No data	No data
Vapor Density:	No data	No data
Solubility:	Insoluble in water	Slightly soluble in water
Freezing/Melting Point:	No data	No data
Boiling Point:	No data	No data
Flash Point:	>200 °F (>93.3 °C) Closed Cup	>150 °F (>67 °C) Closed Cup
Evaporation Rate:	No data	No data
Decomposition Temperature:	No data	No data
Specific Gravity:	1.06-1.07 at 77°F (25°C)	0.90-0.93 at 77 °F (25°C)
VOC (after cure):	3 g/L	3 g/L
Kow:	No data	No data
Viscosity:	500-700 cps at 77°F (2 (25°C)	20-40 cps at 77 °F (25°C)
Corrosiveness:	Non-corrosive	Corrosive

10. Stability and Reactivity

Resin (clear/yellow side)

Reactivity: Material reacts with water.
Chemical Stability: Stable under normal storage conditions.
Condition to Avoid: Moisture. High heat and open flame.
Substances to Avoid: Acids. Bases. Alcohols. Amines. Water. The reaction with water is very slow under 122°F (50°C) but is accelerated at higher temperatures.
Hazardous Reactions: Polymerization may occur at elevated temperatures in the presence of alkalis, tertiary amines and metal compounds.
Decomposition Products: Carbon dioxide, carbon monoxide, oxides of nitrogen, and other organic compounds.

Accelerant (clear side)

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: Mineral acid. Organic acids. Reactive materials. Sodium hypochlorite. Calcium hypochlorite. Peroxides.
Hazardous Reactions: Hazardous polymerization will not occur.
Decomposition Products: Carbon dioxide, carbon monoxide, oxides of nitrogen, tin oxide, and other organic compounds.

11. Toxicological Information

Likely Routes of Exposure

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

Information on Toxicological Effects

Acute toxicity: Harmful if inhaled.

Component	Species	Test Result
Methylene Bisphenyl Isocyanate (101-68-8)		
Acute, *Inhalation,* LC50	Rat	>2.24 mg/l, 1 hour
Polymeric diphenylmethane diisocyanate (9016-87-9)		
Acute, *Inhalation,* LC50	Rat	0.369 mg/l, 4 hours

Skin corrosion/irritation: Causes skin burns. Causes skin irritation.
Eye damage/eye irritation: Causes serious eye damage.
Respiratory sensitization: No data available.
Skin sensitization: May cause an allergic skin reaction.
Germ cell mutagenicity: No data available.
Carcinogenicity: Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Diphenylmethane Diisocyanate Mixed Isomers (26447-40-5)	3 Not classifiable as to carcinogenicity to humans
Methylene Bisphenyl Isocyanate (101-68-8)	3 Not classifiable as to carcinogenicity to humans
Polymeric diphenylmethane diisocyanate (9016-87-9)	3 Not classifiable as to carcinogenicity to humans

Reproductive toxicity: No data available.
Aspiration hazard: May be harmful if swallowed and enters airways.
Specific target organ toxicity:
Single exposure May cause respiratory irritation.
Repeated exposure 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.

Supporting Data

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

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

13. Disposal Consideration

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

Resin (clear/yellow side)

Resin is not regulated as a dangerous good for transport.

Accelerant (green side)

UN number: UN2735
UN proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S. (Hexadecyldimethylamine), 8, III
Precautions: Corrosive
Required Labels: 8
ERG Code (IATA): 8L
EmS (IMDG): F-A, S-B

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:
This substance/mixture is not intended to be transported in bulk.

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) :
Methylene Bisphenyl Isocyanate (101-68-8) LISTED
Polymeric diphenylmethane diisocyanate (9016-87-9) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard Categories:	Immediate	Delayed	Fire	Pressure	Reactivity
Resin	Yes	Yes	No	No	No
Accelerant	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.)
Methylene Bisphenyl Isocyanate	101-68-8	< 15
Polymeric diphenylmethane diisocyanate	9016-87-9	< 10

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Methylene Bisphenyl Isocyanate (CAS 101-68-8)
Polymeric diphenylmethane diisocyanate (CAS 9016-87-9)

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
Methylene Bisphenyl Isocyanate (CAS 101-68-8)	Listed	Listed	Listed	Listed
Polymeric Diphenylmethane Diisocyanate (CAS 9016-87-9)	Listed	Listed	Listed	Listed

This product does not contain known levels of 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 E: Corrosive	**Class D-2A:** Material Causing other toxic effects

International

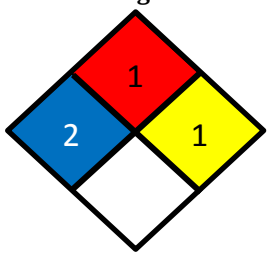
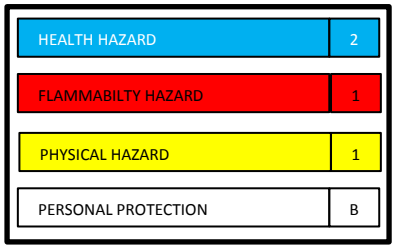
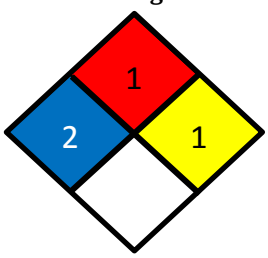
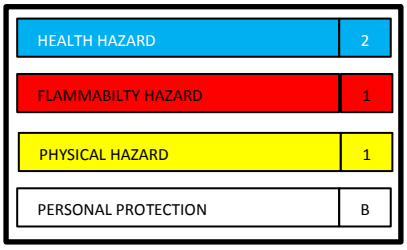
International Inventories

Country or Region	Inventory	On Inventory (Y/N) ?
Canada	Domestic/ Non-Domestic Substances List (DSL / NDSL)	Yes
USA & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

16. Other Information

Date Prepared or Revised: September 2014
Supersedes: September 2013

Additional Classifications

Resin (clear/yellow side)		Accelerant (green side)	
NFPA Ratings	**HMIS Rating**	**NFPA Ratings**	**HMIS Rating**
			

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)
EPA:	Environmental Protection Agency (U.S.)
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals
HMIS:	Hazardous Materials Identification System
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association
IMDG:	International Maritime Dangerous Goods code
NIOSH:	National Institute of Occupational Safety and Health (U.S.)
NFPA:	National Fire Protection Association (US)
NTP:	National Toxicology Program (US)
PEL:	Permissible Exposure Limit
SARA:	Superfund Amendments and Reauthorization Act (U.S. EPA)
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)
VOC:	Volatile Organic Compounds
WHMIS:	Canadian Workplace Hazardous Materials Information System

Disclaimer

This 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.

Internal

FOR INTERNAL USE ONLY

CPFH09 Resin:	CPFH09 Hardener:
XCOM3B – 95% Cartridge	XCOM3A – 5% Cartridge
	XCORR – 5% Cartridge