

**Section 1. IDENTIFICATION**

Product Name: FLEX CAST SA50N ISOCYANATE
Product Identifier/Chemical Name: Polyurethane Isocyanate
Material Use: Component A of a Polyurethane System
Supplier/Manufacturer: Goldenwest Manufacturing Incorporated
2036 Nevada City Hwy, Box 573, Grass Valley, CA 95945
Phone: 530 272-1133 Fax: 530 272-1070

Emergency Phone: Chemtrec: 800-424-9300

Section 2. HAZARDS IDENTIFICATION**Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):**

Health, Reproductive toxicity, 1 B
Health, Respiratory or skin sensitization, 1 Respiratory
Environmental, Hazards to the aquatic environment - Acute, 1
Environmental, Hazards to the aquatic environment - Chronic, 1 Health, Respiratory or skin sensitization, 1 Skin
Health, Skin corrosion/irritation, 2
Health, Carcinogenicity, 2
Health, Serious Eye Damage/Eye Irritation, 2 A
Health, Specific target organ toxicity - Single exposure, 3 Health, Acute toxicity, 4 Inhalation
Health, Acute toxicity, 4 Oral

GHS Label elements, including precautionary statements

GHS Signal Word: **DANGER**

GHS Hazard Pictograms:**GHS Hazard Statements:**

H360 - May damage fertility or the unborn child
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects H317 - May cause an allergic skin reaction
H315 - Causes skin irritation
H351 - Suspected of causing cancer
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness H335 - May cause respiratory irritation
H332 - Harmful if inhaled
H302 - Harmful if swallowed

**GHS Precautionary Statements:**

P201 - Obtain special instructions before use.

P202 - Do not handle until all safety precautions have been read and understood. P260 - Do not breathe dust/fume/gas/mist/vapors/spray.

P273 - Avoid release to the environment.

P280 - Wear protective gloves/protective clothing/eye protection/face protection. P281 - Use personal protective equipment as required.

P284 - Wear respiratory protection.

P305+351+338 - IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

P308+313 - IF exposed or concerned: Get medical advice/attention. P310 - Immediately call a POISON CENTER or doctor/physician. P391 - Collect spillage.

P405 - Store locked up.

P501 - Dispose of contents/container to a licensed waste disposal services provider.

Hazards not otherwise classified (HNOC) or not covered by GHS

Route of Entry: Eyes; Ingestion; Inhalation; Skin;

Target Organs: Respiratory system; Skin; Eyes;

Inhalation:

At room temperature, MDI vapors are minimal due to low vapor pressure. However, heating, spraying, foaming, or otherwise mechanically dispersing (drumming, venting or pumping) operations may generate vapor or aerosol concentrations sufficient to cause irritation or other adverse effects. Excessive exposure may cause irritation of the eyes, upper respiratory tract and lungs. Severe overexposure may lead to pulmonary edema. May cause respiratory sensitization with asthma-like symptoms in susceptible individuals. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Symptoms may include coughing, dryness of throat, headache, nausea, difficult breathing and a feeling of tightness in the chest. Effects may be delayed. Impaired lung function (decreased ventilator capacity) has been associated with overexposure to isocyanates Chronic: As a result of previous repeated overexposures or a single large dose, certain individuals develop isocyanate sensitization (chemical asthma) or tissue injury in the upper respiratory tract. Animal tests indicate skin contact alone may also lead to allergic respiratory reaction. These effects may be permanent. Any person developing asthmatic reaction or other sensitization should be removed from further exposure

Skin Contact:

Product is a skin sensitizer. Causes irritation with symptoms of reddening, itching and swelling. Prolonged or repeated exposure can cause skin irritation, reddening, dermatitis, and in some individuals, sensitization. Skin contact may result in allergic skin reactions or respiratory sensitization, but is not expected to result in absorption of amounts sufficient to cause other adverse effects. May stain skin. Cured material is difficult to remove.

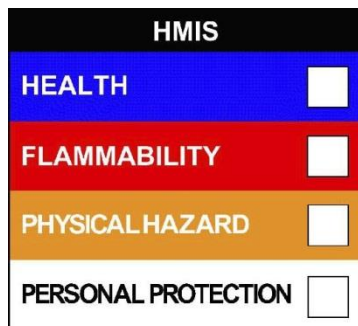
Eye Contact:

As a liquid, vapor, aerosol or dust, may cause irritation, inflammation, and/or damage to sensitive eye tissue. Symptoms include reddening, tearing, stinging and swelling. May cause corneal injury. Prolonged contact may cause conjunctivitis.



NFPA: Health = 2, Fire = 1, Reactivity = 1, Specific Hazard= None

HMIS III: Health = 2, Fire = 1, Physical Hazard = 1



Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENTS:

CAS #	%	Chemical Name
101-68-8	45-55%	4,4'-Methylenediphenyl diisocyanate
117-81-7	60-70%	Di(2-ethylhexyl) phthalate

Section 4. FIRST AID MEASURES

- Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility immediately.
- Skin Contact:** Wash off in flowing warm water or shower with soap. Remove and wash contaminated clothing and discard contaminated shoes. For severe exposure, get under safety shower after removing clothing, then seek medical attention. If redness, itching or a burning sensation develops or persists after the area is washed, consult a physician.
- Eye Contact:** Flush with large amounts of water for 15 minutes. Materials containing MDI may react with the moisture in the eye forming a thick material that is difficult to remove. Get immediate medical attention.
- Ingestion:** DO NOT INDUCE VOMITING. Give 1-2 cups of milk or water to drink. Never give anything by mouth to an unconscious person. Seek medical attention.



Section 5. FIRE-FIGHTING MEASURES

Flammability:	OSHA - none; DOT - none
Flash Point:	446°F
Flash Point Method:	PMCC
Burning Rate:	N/A
Auto ignition Temp:	NDA
LEL:	N/A
UEL:	N/A

Use dry chemical, foam, carbon dioxide, foam or water spray for large fires. The reaction between water and hot isocyanate may be vigorous. If possible, contain fire run-off water.

Protective Equipment: Wear positive-pressure self-contained breathing apparatus with full face mask and full protective clothing.

Unusual Hazards: At temperatures greater than 400°F, polymeric MDI can polymerize and decompose which will cause pressure build-up in closed containers. Explosive rupture is possible. Water contamination will produce carbon dioxide. Do not reseal contaminated containers as pressure buildup may rupture the containers. Downwind personnel must be evacuated. Fire Degradation Products: Isocyanate vapor and mist, carbon dioxide, carbon monoxide, nitrogen oxides and traces of hydrogen cyanide.

Section 6. ACCIDENTAL RELEASE MEASURES

Spill: Evacuate and isolate spill area. Remove any ignition sources. With adequate ventilation and appropriate personal protective equipment, cover the area with an inert absorbent material such as clay or vermiculite and transfer to metal waste containers. Move container to a well ventilated area (outside), but do not seal the container with the isocyanate mixture. Larger quantities of liquid may be transferred directly to drums for disposal. Decontaminate or discard all clean-up equipment. **NOTE: ISOCYANATES WILL REACT WITH WATER AND GENERATE CARBON DIOXIDE. THIS COULD RESULT IN THE RUPTURE OF ANY CLOSED CONTAINERS.**

Clean up: The area should then be flushed with a decontamination solution. The decontamination solution is a 5-10% mixture of sodium carbonate and 0.5% liquid detergent in water solution or a 3-8% concentrated ammonium hydroxide and 0.5% liquid detergent in water. Use 10 parts decontamination solution to 1 part spilled material. If the ammonium hydroxide solution is used, ammonia will be evolved as a vapor. Use caution to avoid exposure to high concentrations of ammonia. Allow to stand for 48 hours letting evolved carbon dioxide escape.

Section 7. HANDLING AND STORAGE

Handling Precautions: Handling: Use personal protective equipment when transferring material to or from drums, totes or other containers. The reaction of polyols and isocyanates generates heat. Contact of the reacting materials with skin or eyes can cause irritation and may be difficult to remove from the affected areas. Do not smoke or use naked lights, open flames, space heaters, or other ignition sources near pouring, frothing or spraying operations.

Special Emphasis for Spray Applications: Inspect the application area from the potential to expose other persons or for overspray to drift onto buildings, vehicles or other property. When spraying building exteriors, persons entering or exiting the building as well as those inside could be exposed to polyisocyanates due to wind conditions, open windows or air intakes. Do not begin application work until these potential problems have been corrected.



Storage Requirements: Storage: When stored between 15 and 30°C (60 and 85°F) in dry place in tightly sealed containers, typical shelf life is 6 months or more from the date of manufacture. Consult technical data sheet for shelf life requirements affecting performance quality. Should freezing occur, the material must be thawed thoroughly and mixed until uniform. Opened containers must be handled properly to prevent moisture pickup. Do not reseal if contamination is suspected.

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: MDI has a low vapor pressure at room temperature. Monitoring is required to determine engineering controls. Uses requiring heating and/or spraying may require more aggressive engineering controls or PPE. Eyewash and safety showers should be available.

Personal Protective Equipment: Personal protective equipment

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection: Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

4,4'-Methylenediphenyl diisocyanate (101-68-8) [45-55%]

Components with workplace control parameters

TWA 0.0050 ppm USA. ACGIH Threshold Limit Values (TLV)
Respiratory sensitization

C 0.02 ppm USA. OSHA - TABLE Z-1 Limits for Air Contaminants -
0.2 mg/m3 1910.1000

C 0.02 ppm USA. Occupational Exposure Limits (OSHA) - Table Z- 1
0.2 mg/m3 Limits for Air Contaminants

The value in mg/m3 is approximate. Ceiling limit is to be determined from breathing-zone air samples.



TWA 0.0050 ppm USA. NIOSH Recommended Exposure Limits
0.05 mg/m3 10 minute ceiling value

C 0.2 ppm USA. NIOSH Recommended Exposure Limits
0.2 mg/m3 10 minute ceiling value

Di(2-ethylhexyl) phthalate (117-81-7) [60-70%]

Components with workplace control parameters

TWA 5 mg/m3 USA. ACGIH Threshold Limit Values (TLV)
Lower Respiratory Tract irritation
Confirmed animal carcinogen with unknown relevance to humans

TWA 5 mg/m3 USA. NIOSH Recommended Exposure Limits
Potential Occupational Carcinogen See Appendix A

ST 10 mg/m3 USA. NIOSH Recommended Exposure Limits
Potential Occupational Carcinogen See Appendix A

TWA 5 mg/m3 USA. Occupational Exposure Limits
(OSHA) - Table Z-1 Limits for Air Contaminants

TWA 5 mg/m3 USA. OSHA - TABLE Z-1 Limits for
Air Contaminants - 1910.1000

STEL 10 mg/m3 USA. OSHA - TABLE Z-1 Limits for
Air Contaminants - 1910.1000

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Non-pigmented liquid.

Physical State: Liquid

Odor Threshold: No data available

Spec Grav./Density: N/A

Viscosity: approx. 400 cps

Boiling Point: approx. 406°F

Flammability: None

Partition Coefficient: No data available

Vapor Pressure: No data available

pH: No data available

Evap. Rate: <1

Decomp Temp: No data available

Odor: musty

Molecular Formula: N/A

Solubility: Not soluble in water; REACTS

Percent Volatile: 0%

Freezing/Melting Pt.: 60°F

Flash Point: 460°F

Vapor Density: >1

Auto-Ignition Temp: NDA

UFL/LFL: No data available

Section 10. STABILITY AND REACTIVITY

Chemical Stability: Polyisocyanates are highly reactive chemicals that should be handled and stored in a way to avoid many common substances, including water and moisture. Product is stable under normal conditions.



- Conditions to Avoid:** Moisture and/or water. High temperatures, sparks, flame and temperature above 350°F.
- Materials to Avoid:** Water; strong bases; alcohols; amines; metal compounds.
- Hazardous Decomposition:** By fire or excessive heat: carbon monoxide, carbon dioxide, oxides of nitrogen, traces of hydrogen cyanide, ammonia and MDI vapors. Excess gas may rupture containers.
- Hazardous Polymerization:** May occur with incompatible reactants, especially strong bases, water or temperatures over 320°F (50°C).

Section 11. TOXICOLOGICAL INFORMATION

4,4'-Methylenediphenyl diisocyanate (101-68-8) [45-55%]

Information on toxicological effects

Acute toxicity:

Oral LD50 LD50 Oral - rat - 4,700 mg/kg

Inhalation LC50 Dermal LD50 no data available

Other information on acute toxicity

Skin corrosion/irritation: Serious eye damage/eye irritation:

Eyes - rabbit - Moderate eye irritation

Respiratory or skin sensitization: no data available

May cause allergic respiratory and skin reactions

Germ cell mutagenicity: Laboratory experiments have shown mutagenic effects.

Genotoxicity in vitro - Human - lymphocyte Sister chromatid exchange

Genotoxicity in vivo - rat - Inhalation DNA damage

Carcinogenicity:

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Diphenylmethane-4,4- diisocyanate)

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Reproductive toxicity - rat - Inhalation:

Maternal Effects: Other effects. Specific Developmental Abnormalities: Musculoskeletal system. no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System): May cause respiratory irritation.



Specific target organ toxicity - repeated exposure (Globally Harmonized System): no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be fatal if inhaled. Causes respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. Causes skin irritation. Eyes Causes eye irritation.

Signs and Symptoms of Exposure: Cough, Shortness of breath, Headache, Nausea, Vomiting, Pulmonary edema. Effects may be delayed.

Synergistic effects: no data available

Additional Information:

RTECS: NQ9350000

Di(2-ethylhexyl) phthalate (117-81-7) [60-70%]

Information on toxicological effects

Acute toxicity:

LD50 Oral - rat - 30,000 mg/kg

Inhalation: no data available

LD50 Dermal - rabbit - 25,000 mg/kg

Skin corrosion/irritation: Skin - rabbit Result: Mild skin irritation - 24 h

Serious eye damage/eye irritation: Eyes - rabbit Result: Mild eye irritation - 24 h

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 2B - Group 2B: Possibly carcinogenic to humans (bis(2-Ethylhexyl) phthalate)

NTP: Reasonably anticipated to be a human carcinogen (bis(2-Ethylhexyl) phthalate)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: May cause congenital malformation in the fetus. Presumed human reproductive toxicant

May cause reproductive disorders.

Specific target organ toxicity - single exposure: no data available

Specific target organ toxicity - repeated exposure: no data available Aspiration hazard: no data available

Additional Information:

RTECS: TI0350000

Lung irritation, Gastrointestinal disturbance

Kidney -

**Section 12. ECOLOGICAL INFORMATION**

4,4'-Methylenediphenyl diisocyanate (101-68-8) [45-55%]

Information on ecological effects

Toxicity:

Toxicity to daphnia EC50 - Daphnia magna (Water flea) - 0.35 mg/l - 24 h. and other aquatic invertebrates

Persistence and degradability: no data available

Bioaccumulative potential: no data available Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: Do not empty into drains. no data available

Di(2-ethylhexyl) phthalate (117-81-7) [60-70%]

Information on ecological effects

Toxicity:

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - > 0.67 mg/l - 96 h.

LC50 - Oncorhynchus mykiss (rainbow trout) - > 0.32 mg/l - 96 h

LC50 - Cyprinodon variegatus (sheepshead minnow) - > 0.17 mg/l - 96 h

LC50 - Lepomis macrochirus (Bluegill) - > 0.20 mg/l - 96 h

NOEC - other fish - > 0.3 mg/l - 96 h

Toxicity to daphnia and Immobilization EC50 - Daphnia magna (Water flea) - > 0.16 mg/l - 48 h. other aquatic invertebrates

Persistence and degradability: no data available Biodegradability Result: - Readily biodegradable. (OECD Test Guideline 301)

Bioaccumulative potential: Bioaccumulation Oncorhynchus mykiss (rainbow trout) - 100 d - 0.014 mg/l

Bioconcentration factor (BCF): 113

Mobility in soil: no data available

Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

no data available

Section 13. DISPOSAL CONSIDERATION

Disposal: Any disposal practice must be in compliance with all federal, state and local laws and regulations. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Waste characterization and disposal compliance are the responsibility solely of the party generating the waste or deciding to discard or dispose of the material. Do not allow material to enter sewers, a body of water, or contact the ground. Refer to RCRA 40 CFR 261, and/or any other appropriate federal, state or local requirements for proper classification information.



Section 14. TRANSPORT INFORMATION

UN3082, Environmentally hazardous substances, liquid, n.o.s., 9, PGIII, (di(2-ethylhexyl)phthalate)

IATA/ICAO/IMDG UN3082, Environmentally hazardous substances, liquid, n.o.s., 9

Section 15. REGULATORY INFORMATION

Component (CAS#) [%] - CODES

RQ(5000LBS), 4,4'-Methylenediphenyl diisocyanate (101-68-8) [45-55%] CERCLA, HAP, IARC, MASS, NJHS, OSHAWAC, PA, SARA313, TSCA, TXAIR

RQ(100LBS), Di(2-ethylhexyl) phthalate (117-81-7) [60-70%] CERCLA, EPCRAWPC, HAP, IARC, MASS, NJHS, NRC, OSHAWAC, PA, PRIPOL, PROP65, SARA313, TOXICRCRA, TSCA, TXAIR, TXHWL

Regulatory CODE Descriptions

- RQ = Reportable Quantity
- CERCLA = Superfund clean up substance HAP = Hazardous Air Pollutants
- IARC = IARC Carcinogen Risks
- MASS = MA Massachusetts Hazardous Substances List NJHS = NJ Right-to-Know Hazardous Substances
- OSHAWAC = OSHA Workplace Air Contaminants
- PA = PA Right-To-Know List of Hazardous Substances SARA313 = SARA 313 Title III Toxic Chemicals
- TSCA = Toxic Substances Control Act
- TXAIR = TX Air Contaminants with Health Effects Screening Level
- EPCRAWPC = EPCRA Water Priority Chemicals
- NRC = Nationally Recognized Carcinogens
- PRIPOL = Clean Water Act Priority Pollutants PROP65 = CA Prop 65
- TOXICRCRA = RCRA Toxic Hazardous Wastes (U-List)
- TXHWL = TX Hazardous Waste List

Section 16. OTHER INFORMATION

Disclaimer:

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).