



Section 1 Identification

Product identifiers

Product name: Repro® Laminating Resin Part A

Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Fast-Cast Urethane Polyol

Details of the supplier of the safety data sheet

Freeman Manufacturing and Supply Company
 1101 Moore Road, Avon, OH 44011
 Phone (440) 934-1902
 FAX (440) 934-7200

HMIS	
H	1
F	2
R	0
PPE	
Sec. 8	

24 Hour emergency telephone number: CHEMTREC (800) 424-9300

Section 2 Hazard Identification

GHS Classification in accordance with 29 CFR 1910.1200 (OSHA HCS)

Acute toxicity (Oral), Category 4
 Eye irritation, Category 2A
 Flammable liquid, Category 4

GHS Label elements, including precautionary statements

Hazard pictograms



Signal word

Warning

Hazard statements

Harmful if swallowed.
 Causes eye irritation.
 Combustible liquid.

Precautionary statements

Prevention

Do not breath mist, vapors or spray.
 Wear protective gloves/eye protection/face protection.
 Wash skin thoroughly after handling.
 Keep away from heat/sparks/open flames/hot surfaces.
 Do not eat, drink or smoke when using this product.

Response

If swallowed: Rinse mouth and drink plenty of water. Get medical attention immediately.
 If on skin: Remove contaminated clothing. Wash thoroughly soap and water.
 If skin irritation or rash occurs get medical attention.
 If in eyes: Rinse continuously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Section 2 Hazard Identification

Storage

Store in a well-ventilated place. Keep cool. Keep container tightly closed.

Disposal

Dispose of contents and container to an appropriate waste site in accordance with local and national regulations.

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

None known

Section 3 Composition/Information on Ingredients

Ingredient	CAS Number	Concentration (%)
Polyether polyols	Proprietary mixture of 67800-94-6, 25214-63-5,	10 - 45
Titanium dioxide	13463-67-7	1 - 5
Distillates (petroleum) hydrotreated light	64742-47-8	1 - 5
1,2,4-Trimethylbenzene	95-63-6	1 - 5
Cumene	98-82-8	0.1 - 0.50
N-Methylpyrrolidone	872-50-4	0 - 0.10

Section 4 First Aid Measures

If inhaled

Move person into fresh air. If not breathing, give artificial respiration. Get medical attention if irritation develops.

In case of skin contact

Wash thoroughly with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing and shoes before reuse.

In case of eye contact

Flush eyes with water for at least 15 minutes. Get medical attention immediately.

If swallowed

Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Provided the patient is conscious, wash out mouth and then drink plenty of water. Get immediate medical attention.

Most important symptoms and effects, both acute and delayed

- Eye contact:** Causes eye irritation.
- Inhalation:** May cause irritation
- Skin contact:** Causes skin irritation
- Ingestion:** May cause irritation of the gastrointestinal tract.

Indication of any immediate medical attention and special treatment needed

- Inhalation:** No specific data
- Ingestion:** No specific data.
- Skin contact:** Irritation, redness
- Eye contact:** Pain or irritation, watering, redness

Notes to physician: Symptomatic treatment and supportive therapy as indicated.

Section 5 Fire-Fighting Measures

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media

High volume water jet

Special hazards arising from the substance or mixture

Fire or high heat may produce hazardous decomposition products: carbon dioxide, carbon monoxide, and other aliphatic fragments which have not been determined.

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

No data available.

Section 6 Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Avoid breathing vapors, or mist. For personal protection see section 8.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Use an inert absorbent (e.g. sand, silica gel, sawdust, universal binder). Sweep up or shovel into a suitable containers for disposal.

Section 7 Handling and Storage

Precautions for safe handling

Use normal precautions when handling combustible materials. Do not breathe fumes or vapor. Do not allow material to contact skin. Provide appropriate exhaust ventilation.

Conditions for safe storage, including any incompatibilities

Store at ambient temperatures in closed containers. Do not heat this material above the flash point. Incompatible with acids, and oxidizing agents.

Section 8 Exposure Controls/Personal Protection

Components with workplace control parameters

Component	Value	Control parameters	Source
Polyether polyols	TWA	20 ppm	ACGIH
Titanium dioxide	TWA	10 mg/m ³	ACGIH
Distillates (petroleum) hydrotreated light	TWA	200 mg/m ³	ACGIH
1,2,4-Trimethylbenzene	TWA	25 ppm	ACGIH
Cumene	TWA	50 ppm	ACGIH
N-Methylpyrrolidone	TWA	10 ppm	US WEEL

Appropriate engineering controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits.

Section 8 Exposure Controls/Personal Protection

Individual protection measures

Eye/face protection

Safety glasses equipped with side shields or goggles.

Hand protection

Chemical-resistant, impervious gloves. Consult glove manufacturer for suitability.

Contaminated gloves should be replaced.

Body protection

Prevent skin contact when handling material.

Respiratory protection

The need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used.

Safety stations

Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

General hygienic practices

Avoid breathing vapor or mist. Avoid contamination of food, beverages, or smoking materials. Wash thoroughly after handling, and before eating, drinking or smoking. Remove contaminated clothing promptly and clean thoroughly before reuse.

Section 9 Physical and Chemical Properties

Appearance	Opaque white liquid
Odor	Mild, of polyol
Odor threshold	No data available
pH	No data available
Melting or freezing point	No data available
Initial boiling point/boiling range	No data available
Flash point (COC)	66°C (150°F)
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density (g/cc)	1.9
Water solubility	Slight
Coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	Approximately 3,500 cP at room temperature
VOC Content	1.15 lb/gal.
% Volatile	5-10%

Section 10 Stability and Reactivity

Reactivity

No dangerous reaction known under conditions of normal use

Section 10 Stability and Reactivity

Chemical stability

Stable under recommended storage conditions

Possibility of hazardous reactions

None known

Conditions to avoid

Heat and open flames

Incompatible materials

Water, alcohols, amines, bases, acids, and oxidizing agents

Hazardous decomposition products

Thermal oxidative decomposition can produce carbon monoxide, carbon dioxide, and other aliphatic fragments which have not been determined

Section 11 Toxicological Information

Information on toxicological effects

Acute oral toxicity LD50, Rat 500 - <2,000 mg/kg (Polyether polyol)

Acute inhalation toxicity No data available

Acute dermal toxicity LD50, Rat >2,000 mg/kg (Polyether polyol)

Skin corrosion/irritation Mild skin irritant

Serious eye damage/eye irritation Moderate eye irritant

Respiratory or skin sensitization No data available

Germ cell mutagenicity Not expected to be mutagenic in humans.

Carcinogenicity

IARC Titanium dioxide and Cumene: 2B. Possibly carcinogenic to humans

NTP Cumene: Reasonably anticipated to be a human carcinogen

OSHA No components of this product present at levels greater than or equal to 0.1% are identified as a carcinogen or potential carcinogen.

Reproductive toxicity Not expected to be a hazard

Specific target organ toxicity

Single exposure None expected

Specific target organ toxicity

Repeated exposure None expected

Aspiration toxicity Not expected to be a hazard

Section 12 Ecological Information

Ecotoxicity

Product: No data available

Specified substances:
 Polyether polyol LC 50 (Fathead minnow (Pimephales promelas), 96 h):
 >1,000 mg/L

Persistence and degradability

Product: No data available

Specified substances:
 Polyether Polyol Biodegradation, aerobic, <50%, Exposure time: 28 d

Bioaccumulative potential

Product: No data available

Specified substances:
 Polyether Polyol Does not significantly biaccumulate

Section 12 Ecological Information

Mobility in soil

Product: No data available
Specified substances:
 Polyether Polyol Adsorption to solid soil phase is not expected

Section 13 Disposal Considerations

Do not dispose of waste into sewer. Do not contaminate waterways. Contact a licensed contractor for detailed recommendations. Follow applicable federal, state, and local regulations.

Section 14 Transport Information

DOT Proper Shipping Name: Liquid Resin N.O.I Not Regulated
TDG Proper Shipping Name: Liquid Resin N.O.I Not Regulated
IMDG Proper Shipping Name: Liquid Resin N.O.I Not Regulated
IATA Proper Shipping Name: Liquid Resin N.O.I Not Regulated

Section 15 Regulatory Information

US Federal Regulations

Toxic Substance Control Act: All ingredients listed on TSCA Inventory.
 CERCLA Reportable Quantity (RQ): Cumene (5,000 lb.)
 SARA Sec 302 Extremely Hazardous Substances: None present in regulated quantities.
 SARA Sec. 311/312 Codes: See Section 2
 SARA Sec. 313 Toxic Chemicals (40 CFR 372.65): This product may be subject to SARA notification requirements. Product contains: 1,2,4-Trimethylbenzene, Cumene, and N-Methylpyrrolidone

US State Regulations

California Proposition 65: ⚠️ **WARNING:** This product can expose you to Cumene and N-Methylpyrrolidone, which are known to the State of California to cause cancer or birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
 Barium sulfate is listed on both the New Jersey and the Pennsylvania Right to Know lists.

Section 16 Other Information

Disclaimer

The following supersedes Buyer's documents. SELLER MAKES NO REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller be liable for incidental, consequential or indirect damages for alleged negligence, breach of warranty, strict of liability arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results are based on controlled lab work and must be confirmed by Buyer by testing for its intended conditions of use. The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.

Section 1 Identification

Product identifiers

Product name: Repro® Laminating Resin Part B

Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Fast-Cast Urethane Isocyanate

Details of the supplier of the safety data sheet

Freeman Manufacturing and Supply Company
 1101 Moore Road, Avon, OH 44011
 Phone (440) 934-1902
 FAX (440) 934-7200

HMIS	
H	3
F	2
R	1
PPE	
Sec. 8	

24 Hour emergency telephone number: CHEMTREC (800) 424-9300

Section 2 Hazard Identification

GHS Classification in accordance with 29 CFR 1910.1200 (OSHA HCS)

- Acute toxicity (Inhalation), Category 4
- Specific target organ toxicity, single exposure Category 3 (Respiratory System)
- Respiratory sensitization, Category 1
- Specific target organ toxicity, repeated exposure Category 1 (Respiratory Tract)
- Skin irritation, Category 2
- Skin sensitization, Category 1
- Eye irritation, Category 2B
- Flammable Liquid, Category 4
- Carcinogenicity, Category 2

GHS Label elements, including precautionary statements

Hazard pictograms



Signal word

Danger

Hazard statements

- Harmful if inhaled.
- Combustible liquid.
- May cause respiratory irritation.
- May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- May causes damage to organs through prolonged or repeated exposure if inhaled.
- Causes skin irritation.
- May cause an allergic skin reaction.
- Causes serious eye irritation.
- Suspected of causing cancer.
- May damage fertility or the unborn child.

Section 2 Hazard Identification

Precautionary statements

Prevention

- Do not breath mist, vapors or spray.
- Wear protective gloves/eye protection/face protection.
- Use only outdoors or in a well-ventilated area.
- In case of inadequate ventilation wear respiratory protection
- Wash skin and face thoroughly after handling.
- Do not eat, drink or smoke when using this product.

Response

- If on skin: Remove contaminated clothing. Wash skin with soap and water. If skin irritation or rash occurs get medical attention.
- If inhaled: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms get medical attention.
- If in eyes: Rinse continuously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists get medical attention.
- If swallowed: Immediately call a poison center and seek medical attention.

Storage

Store in a well-ventilated place. Keep cool. Keep container tightly closed.

Disposal

Dispose of contents and container to an appropriate waste site in accordance with local and national regulations.

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

None known

Section 3 Composition/Information on Ingredients

Ingredient	CAS Number	Concentration (%)
4,4'-Diphenylmethane diisocyanate (MDI)	Proprietary mixture of 101-68-8, 26447-40-5	10 - 40
Polymeric diphenylmethane diisocyanate (pMDI)	9016-87-9	5 - 20
Distillates (petroleum) hydrotreated light	64742-47-8	1 - 5
1,2,4-Trimethylbenzene	95-63-6	1 - 5
Cumene	98-82-8	0.1 - 0.65
N-Methylpyrrolidone	872-50-4	0 - 0.20

Section 4 First Aid Measures

If inhaled

- Move person into fresh air. If not breathing, give artificial respiration.
- The onset of respiratory symptoms may be delayed for several hours after exposure.
- Get medical attention if irritation develops.

In case of skin contact

- Wash thoroughly with soap and water. Immediately remove contaminated clothing and shoes.
- Get medical attention if symptoms occur. Wash clothing and shoes before reuse.

Section 4 First Aid Measures

In case of eye contact

Flush eyes with water for at least 15 minutes. Get medical attention immediately.

If swallowed

Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Provided the patient is conscious, wash out mouth with water. Get medical attention if symptoms appear.

Most important symptoms and effects, both acute and delayed

Eye contact: Causes eye irritation.

Inhalation: Harmful if inhaled. May cause respiratory irritation. Repeated inhalation of vapor at levels above the occupational exposure limit could cause respiratory sensitization. Symptoms may include irritation to the eyes, nose, throat and lungs, possibly combined with dryness of the throat, tightness of chest and difficulty in breathing.

Skin contact: Causes skin irritation. May cause sensitization by skin contact.

Ingestion: May cause irritation of the gastrointestinal tract. Risk of lung edema if swallowed and enters airway.

Indication of any immediate medical attention and special treatment needed

Inhalation: Respiratory tract irritation, coughing, wheezing and breathing difficulties

Ingestion: No specific data.

Skin contact: Irritation, redness

Eye contact: Pain or irritation, watering, redness

Notes to physician: Symptomatic treatment and supportive therapy as indicated. Following severe exposure the patient should be kept under medical review for at least 48 hours.

Section 5 Fire-Fighting Measures

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media

High volume water jet

Special hazards arising from the chemical

Fire or high heat may produce hazardous decomposition products: carbon dioxide, carbon monoxide, oxides from nitrogen, dense black smoke

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

Closed containers may rupture under extreme heat or when contents are contaminated with water. Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture. Apply water from a safe distance, since reactions between water and hot diisocyanates can be vigorous.

Section 6 Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Avoid breathing vapors, mist or gas. For personal protection see section 8.

Environmental precautions

Do not let product enter drains.

Section 6 Accidental Release Measures

Methods and materials for containment and cleaning up

Use an inert absorbent (e.g. sand, silica gel, sawdust, universal binder).
 Sweep up or shovel into a suitable containers for disposal.

Section 7 Handling and Storage

Precautions for safe handling

Use normal precautions when handling combustible materials. Do not breathe fumes or vapor.
 Do not allow material to contact skin. Provide appropriate exhaust ventilation.

Conditions for safe storage, including any incompatibilities

Store at ambient temperatures in closed containers. Do not heat this material above the flash point. Incompatible with water, alcohols, amines, bases, and acids.

Section 8 Exposure Controls/Personal Protection

Components with workplace control parameters

Component	Value Type	Control Parameters	Source
4,4'-Diphenylmethane Diisocyanate	TWA	0.005 ppm	ACGIH
Distillates (petroleum) hydrotreated light	TWA	200 mg/m ³	ACGIH
1,2,4-Trimethylbenzene	TWA	25 ppm	ACGIH
Cumene	TWA	50 ppm	ACGIH
N-Methylpyrrolidone	TWA	10 ppm	US WEEL

Exposure controls

Appropriate engineering controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits.

Individual protection measures

Eye/face protection

Safety glasses equipped with side shields or goggles.

Hand protection

Chemical-resistant, impervious gloves. Consult glove manufacturer for suitability.
 Contaminated gloves should be replaced.

Body protection

Prevent skin contact when handling material.

Respiratory protection

The need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used.

Safety stations

Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Section 8 Exposure Controls/Personal Protection

General hygienic practices

Avoid breathing vapor or mist. Avoid contamination of food, beverages, or smoking materials. Wash thoroughly after handling, and before eating, drinking or smoking. Remove contaminated clothing promptly and clean thoroughly before reuse.

Section 9 Physical and Chemical Properties

Appearance	Opaque white liquid
Odor	Mild earthy, musty
Odor threshold	No data available
pH	No data available
Melting or freezing point	No data available
Initial boiling point/boiling range	No data available
Flash point	66°C (150°F)
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density (g/cc)	1.9
Water solubility	Insoluble-slowly reacts with water to produce CO ₂
Coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	Approximately 2,000 cP at room temperature
VOC Content	0.84 lb/gal.
% Volatile	5-10%

Section 10 Stability and Reactivity

Reactivity

No dangerous reaction known under conditions of normal use.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Polymerization may occur. Avoid contact with moisture or other material, which react with isocyanates. May occur at temperatures above 400°F (204°C)

Conditions to avoid

Heat and open flames.

Incompatible materials

Water, alcohols, amines, metal compounds, bases, and acids

Hazardous decomposition products

Thermal oxidative decomposition can produce carbon monoxide, carbon dioxide, oxides of nitrogen, dense black smoke, isocyanate, isocyanic acid, and other undetermined compounds.

Section 11 Toxicological Information

Information on toxicological effects

Acute oral toxicity	LD50, Rat >2,000 mg/kg (Polymeric MDI)
Acute inhalation toxicity	LC50, Rat 0.49 mg/L (Polymeric MDI)
Acute dermal toxicity	LD50, Rabbit >9,400 mg.kg (Polymeric MDI)
Skin corrosion/irritation	Mild skin irritant
Serious eye damage/eye irritation	Moderate eye irritant
Respiratory or skin sensitization	Skin sensitizer and respiratory sensitizer
Germ cell mutagenicity	No data available
Carcinogenicity	
IARC	Cumene: 2B. Possibly carcinogenic to humans
NTP	Cumene: Reasonably anticipated to be a human carcinogen
OSHA	No components of this product present at levels greater than or equal to 0.1% are identified as a carcinogen or potential carcinogen.
Reproductive toxicity	May damage fertility or unborn child.
Specific target organ toxicity	
Single exposure	May cause respiratory irritation
Specific target organ toxicity	
Repeated exposure	Respiratory system
Aspiration toxicity	No data available.

Section 12 Ecological Information

Ecotoxicity

Product:	No data available
Specified substances:	
4,4'-Diphenylmethane	LC50 (Zebra fish (Brachydanio rerio), 24 h): >500 mg/L
-Diisocyanate (MDI)	

Persistence and degradability

Product:	No data available
Specified substances:	
Polymeric (MDI):	Not degradable

Bioaccumulative potential

Product:	No data available
Specified substances:	
Polymeric (MDI):	Does not bioaccumulate

Mobility in soil

Product:	No data available
Specified substances:	No data available

Section 13 Disposal Considerations

Do not dispose of waste into sewer. Do not contaminate waterways. Contact a licensed contractor for detailed recommendations. Follow applicable federal, state, and local regulations.

Section 14 Transport Information

DOT Proper Shipping Name: Liquid Resin N.O.I Not Regulated
TDG Proper Shipping Name: Liquid Resin N.O.I Not Regulated
IMDG Proper Shipping Name: Liquid Resin N.O.I Not Regulated
IATA Proper Shipping Name: Liquid Resin N.O.I Not Regulated

Section 15 Regulatory Information

US Federal Regulations

Toxic Substance Control Act: All ingredients listed on TSCA Inventory.
CERCLA Reportable Quantity (RQ): 4,4'-Diphenylmethane Diisocyanate (5,000 lb.),
SARA Sec 302 Extremely Hazardous Substances: None present in regulated quantities.
SARA Sec. 311/312 Codes: See Section 2
SARA Sec. 313 Toxic Chemicals (40 CFR 372): This product may be subject to SARA notification requirements. Product contains: 4,4'-Diphenylmethane Diisocyanate, Polymeric Diphenylmethane Diisocyanate, 1,2,4-Trimethylbenzene, Cumene, and N-Methylpyrrolidone

US State Regulations

California Proposition 65: ⚠️ WARNING: This product can expose you to Cumene and N-Methylpyrrolidone, which are known to the State of California to cause cancer or birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
Barium sulfate is listed on both the New Jersey and the Pennsylvania Right to Know lists.

Section 16 Other Information

Disclaimer

The following supersedes Buyer's documents. SELLER MAKES NO REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller be liable for incidental, consequential or indirect damages for alleged negligence, breach of warranty, strict of liability arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results are based on controlled lab work and must be confirmed by Buyer by testing for its intended conditions of use. The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.