



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 18-Sep-2026

Version 2.0

1. Identification

Product identifier

Product Name THERMA-SHIELD® 2004 Part B (Resin)

Other means of identification

Product Code 2004 (Part B)

Synonyms Urethane System Resin Component

Chemical family resin

Recommended use of the chemical and restrictions on use

Recommended Use polyurethane component; industrial chemicals

Suitable for use in industrial sector Polymers industry; chemical industry

Restrictions on use Uses other than recommended

Details of the supplier of the safety data sheet

Supplier Address / Manufacturer Address Innovative Polymer Systems

4117 Capital Drive

New Albany, IN 47150

Phone: (812) 776-6727

Emergency telephone number

Emergency Telephone Call CHEMTREC Day or Night:

Within USA and Canada: 1-800 424-9300

2. Hazards Identification

According to Regulation 2024 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Eye Dam.	1	Serious eye damage
Skin Irrit.	2	Skin irritation
Skin Sens.	1	Skin sensitization
Carc.	2	Carcinogenicity
Repr.	1B (unborn child)	Reproductive toxicity

Label elements



GHS05 (Corrosion), GHS07 (Exclamation Mark), GHS08 (Health Hazard)

Signal Word:

Danger

Hazard Statement:

H318	Causes serious eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H360	May damage the unborn child.

Precautionary Statements (Prevention):

P280	Wear protective gloves, protective clothing and eye protection or face protection.
P201	Obtain special instructions before use.
P261	Avoid breathing mist or vapour or spray.
P202	Do not handle until all safety precautions have been read and understood.
P272	Contaminated work clothing should not be allowed out of the workplace.
P264	Wash contaminated body parts thoroughly after handling.

Precautionary Statements (Response):

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or physician.
P308 + P313	IF exposed or concerned: Get medical attention.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P333 + P313	If skin irritation or rash occurs: Get medical attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Precautionary Statements (Storage):

P405	Store locked up.
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Precautionary Statements (Disposal):

P501	Dispose of contents and container in accordance with local regulations.
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Hazards not otherwise classified

No specific dangers known, if the regulations/notes for storage and handling are considered.

3. Composition / Information on Ingredients

According to Regulation 2024 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Oxirane, 2-methyl-, polymer with oxirane, ether with 2,6-bis[[bis(2-hydroxyethyl)amino]methyl]-4- branched nonylphenol

CAS Number 940912-28-7

Content (W/W) >= 10.0 - <= 30.0%

Synonym (POLYMER) Oxirane, 2-methyl-, polymer with oxirane, ether with 2,6-bis[[bis(2-hydroxyethyl)amino]methyl]-4-branched nonylphenol

Halogenated hydrocarbon

NJ TSNR 161090809-7712

Content (W/W) >= 7.0 - <= 13.0%

Synonym No data available.

Hydroxyalkyl ether

NJ TSRN 161090809-5012

Content (W/W) $\geq 1.0 - < 5.0\%$ **Synonym** No data available.**Alkylenediamine polymer with alkoxides**

NJ TSRN 161090809-5250

Content (W/W) $\geq 3.0 - \leq 7.0\%$ **Synonym** No data available.**Alkyl halide Phosphate**

NJ TSRN 161090809-7039

Content (W/W) $> 3.0 - \leq 7.0\%$ **Synonym** No data available.**Proprietary Polyol**

NJ TSRN 161090809-5002

Content (W/W) $\geq 0.5 - \leq 1.5\%$ **Synonym** No data available.**Alkylenedinitrilotetraalkanol**

NJ TSRN 161090809-7742

Content (W/W) $\geq 0.5 - \leq 1.5\%$ **Synonym** No data available.**Ethylene oxide, polymer with 2,2'-iminodiethanol and propylene oxide****CAS Number** 34354-45-5**Content (W/W)** $\geq 0.5 - < 1.5\%$ **Synonym** (POLYMER) Ethylene oxide, polymer with 2,2'-iminodiethanol and propylene oxide**1,2-dimethylimidazole****CAS Number** 1739-84-0**Content (W/W)** $\geq 0.5 - < 1.5\%$ **Synonym** No data available.**Hexanoic acid, 2-ethyl-, bismuth(3+) salt****CAS Number** 67874-71-9**Content (W/W)** $\geq 0.5 - < 1.5\%$ **Synonym** No data available.**2-ethylhexanoic acid****CAS Number** 149-57-5**Content (W/W)** $\geq 0.1 - \leq 1.0\%$ **Synonym** 2-Ethylhexanoic acid**ethylene glycol****CAS Number** 107-21-1**Content (W/W)** $\geq 0.1 - \leq 1.0\%$ **Synonym** 1,2-Ethanediol; Ethylene glycol

The actual concentration is withheld as a trade secret.

NJ TSRN New Jersey Trade Secret Registry Number

4. First-Aid Measures

Description of first aid measures**General advice:**

Remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

If on skin:

Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

If in eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Remove contact lenses, if present. Immediate medical attention required.

If swallowed:

Rinse mouth and then drink 200-300 ml of water. Do not induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

Most important symptoms and effects, both acute and delayed

Symptoms Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., corneal injury, skin irritation, Skin contact may provoke the following symptoms:, allergic symptoms

Information on Oxirane, 2-methyl-, polymer with oxirane, ether with 2,6-bis[[bis(2-hydroxyethyl)amino]methyl]-4-branched nonylphenol

Symptoms Ingestion may cause gastrointestinal irritation with nausea, vomiting and diarrhea., skin irritation, corneal injury

Information on Alkylenediamine polymer with alkoxides

Symptoms No data available.

Information on Morpholine derivative

Symptoms Overexposure may cause:, Eye irritation, skin irritation, erythema, nausea, headache, vomiting, dizziness, diarrhea, abdominal cramps

Information on Hexanoic acid, 2-ethyl-, bismuth(3+) salt

Symptoms Overexposure may cause:, corneal injury, skin corrosion, severe pain, coughing, respiratory disorders, dyspnea, nausea, headache, vomiting, dizziness, diarrhea, abdominal cramps

Information on Ethylene oxide, polymer with 2,2'-iminodiethanol and propylene oxide

Symptoms skin irritation, corneal injury, Ingestion may cause gastrointestinal irritation with nausea, vomiting and diarrhea.

Information on Hydroxyalkyl ether

Symptoms Overexposure may cause:, vomiting, coma, abdominal cramps, lethargy, nausea, diarrhea, headache

Information on Alkyl halide Phosphate

Symptoms Overexposure may cause:, convulsions, depression, hypoxemia, tremors

Information on Proprietary Polyol

Symptoms Overexposure may cause:, vomiting, nausea, diarrhea, headache, dizziness

Information on 1,2-dimethylimidazole

Symptoms Overexposure may cause:, corneal injury, skin corrosion, severe pain, coughing, respiratory disorders, dyspnea, nausea, headache, vomiting, dizziness, diarrhea, abdominal cramps

Information on Alkylenedinitrotetraalkanol

Symptoms Overexposure may cause:, corneal injury, skin corrosion, severe pain, coughing, respiratory disorders, dyspnea, nausea, headache, vomiting, dizziness, diarrhea, abdominal cramps

Hazards Symptoms can appear later.

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment:	Treat according to symptoms (decontamination, vital functions), no known specific antidote.
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5. Fire-Fighting Measures**Extinguishing media****Suitable extinguishing media:**

water spray, dry powder, carbon dioxide, foam

Unsuitable extinguishing media for safety reasons:

water jet

Special hazards arising from the substance or mixture**Hazards during fire-fighting:**

No particular hazards known.

Advice for fire-fighters**Protective equipment for fire-fighting:**

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

Further accidental release measures:

High risk of slipping due to leakage/spillage of product.

Personal precautions, protective equipment and emergency procedures

Use personal protective clothing.

Environmental precautions

Do not empty into drains. Do not discharge into the subsoil/soil.

Methods and material for containment and cleaning up

Spills should be contained, solidified, and placed in suitable containers for disposal.

7. Handling and Storage

Precautions for safe handling

Ensure thorough ventilation of stores and work areas. Wear suitable protective clothing and gloves. Use suitable eye protection. Avoid inhalation of mists/vapours. Contaminated work clothing should not be allowed out of the workplace. When using do not eat, drink or smoke. Protect against moisture. Handle in accordance with good industrial hygiene and safety practice.

Protection against fire and explosion:

No special precautions necessary.

Conditions for safe storage, including any incompatibilities

Segregate from foods and animal feeds.

Suitable materials for containers Carbon steel (Iron), High density polyethylene (HDPE), Low density polyethylene (LDPE), Stainless steel 1.4301 (V2)

Further information on storage conditions From this information no suitability of the materials mentioned above for the design of installations, including containers for permanent storage, can be inferred. Special conditions apply to the selection of materials in this regard, which we can communicate on request. Containers should be stored tightly sealed in a dry place.

Storage stability:

Storage temperature 16 - 27 °C Protect against moisture. The stated storage temperature is noted for health and safety in the workplace. With regard to Quality, please refer to the product specific Technical Bulletin.

8. Exposure Controls/Personal Protection

Components with occupational exposure limits

Proprietary Polyol	OSHA Z1:	PEL 15 mg/m3 Total dust ;
	OSHA Z1:	PEL 5 mg/m3 Respirable fraction ;
ethylene glycol	ACGIH, US:	TWA value 25 ppm Vapor fraction ;
	ACGIH, US:	STEL value 50 ppm Vapor fraction ;

	ACGIH, US:	STEL value 10 mg/m3 Inhalable fraction, Aerosole ;
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Advice on system design:

Provide local exhaust ventilation to control vapours/mists.

Personal protective equipment**Respiratory protection:**

Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator as needed.

Hand protection:

Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection:

Wear face shield or tightly fitting safety goggles (chemical goggles) if splashing hazard exists.

Body protection:

Standard work clothes and shoes., Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures:

Avoid contact with skin and eyes. Handle in accordance with good industrial hygiene and safety practice. Wear protective clothing as necessary to prevent contact. Avoid inhalation of vapours/mists. Wash soiled clothing immediately. Do not eat, drink or use tobacco while working. Wash thoroughly after handling.

9. Physical and Chemical Properties

Physical state:	liquid	
Form:	liquid	
Odour:	amine-like	
Odour threshold:	No applicable information available.	
Colour:	amber	
pH value:	>= 7	
Freezing point:	0.00 °C	
Melting point:	No data available.	
Boiling point:	100.00 °C	
Sublimation point:	No applicable information available.	
Flash point:	> 94.00 °C	(closed cup)
Flammability:	not flammable	(derived from flash point)
Lower explosion limit:	For liquids not relevant for classification and labelling. The lower explosion point may be 5 - 15 °C below the flash point.	
Upper explosion limit:	For liquids not relevant for classification and labelling.	
Autoignition:	Unspecified	

Vapour pressure:	< 0.1 hPa (25 °C)
Density:	1.2000 g/cm3 (25.00 °C)
Relative density:	No data available.
Relative vapour density:	No data available.
Partitioning coefficient n- octanol/water (log Pow):	not applicable
Self-ignition temperature:	not self-igniting

Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated.
Viscosity, dynamic:	600 - 800 mPa.s (23.00 °C)
Viscosity, kinematic:	not determined
Solubility in water:	partly soluble
Solubility (quantitative):	No data available.
Solubility (qualitative):	No data available.
Molecular weight:	No data available.
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.
Other Information:	If necessary, information on other physical and chemical parameters is indicated in this section.

Particle characteristics

No applicable information available.

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:

No corrosive effect on metal.

Oxidizing properties:

not fire-propagating

Chemical stability

The product is chemically stable.

Possibility of hazardous reactions

No hazardous reactions if stored and handled as prescribed/indicated.

Conditions to avoid

Temperature < 0 degrees Celsius

Incompatible materials

acids, oxidizing agents, isocyanates

Hazardous decomposition products**Decomposition products:**

Hazardous decomposition products carbon monoxide, carbon dioxide, nitrogen oxide, hydrogen cyanide

Thermal decomposition:

No decomposition if stored and handled as prescribed/indicated.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects**Oral**

Type of value ATE

Value 3,787 mg/kg The product has not been tested. The statement has been derived from the properties of the individual components.

Information on Oxirane, 2-methyl-, polymer with oxirane, ether with 2,6-bis[[bis(2-hydroxyethyl)amino]methyl]-4-branched nonylphenol

Type of value LD50

Species rat

Value 1,370 mg/kg

Information on Alkyl halide Phosphate

Type of value LD50

Species rat (female)

Value 630 mg/kg (Guideline 92/69/EEC, B.1)

Inhalation

No applicable information available.

Dermal

Type of value ATE

Value > 5,000 mg/kg

Assessment other acute effects

Assessment of STOT single:

Not classified, due to lack of data.

Irritation / corrosion

Assessment of irritating effects May cause severe damage to the eyes. Skin contact causes irritation.

Information on Oxirane, 2-methyl-, polymer with oxirane, ether with 2,6-bis[[bis(2-hydroxyethyl)amino]methyl]-4-branched nonylphenol

Assessment of irritating effects Skin contact causes irritation. May cause severe damage to the eyes.

Information on Alkylenediamine polymer with alkoxides

Assessment of irritating effects May cause slight irritation to the skin. Eye contact causes irritation.

Information on Morpholine derivative

Assessment of irritating effects Eye contact causes irritation. Skin contact causes slight irritation.

Information on Hexanoic acid, 2-ethyl-, bismuth(3+) salt

Assessment of irritating effects Skin contact causes irritation. May cause severe damage to the eyes.

Information on Ethylene oxide, polymer with 2,2'-iminodiethanol and propylene oxide

Assessment of irritating effects Skin contact causes irritation. May cause severe damage to the eyes.

Information on Alkylenedinitrilotetraalkanol

Assessment of irritating effects May cause severe damage to the eyes. Not irritating to the skin. Prolonged contact with the product can result in skin irritation.

Information on 1,2-dimethylimidazole

Assessment of irritating effects Skin contact causes irritation. May cause severe damage to the eyes.

Sensitization

Assessment of sensitization Sensitization after skin contact possible.

Information on Alkylenediamine polymer with alkoxides

Assessment of sensitization:

sensitizing effect in animal tests

Aspiration Hazard

No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity Repeated oral uptake of the substance did not cause substance-related effects. Repeated inhalative uptake of the substance did not cause substance-related effects. Repeated dermal uptake of the substance did not cause substance-related effects.

Information on Hydroxyalkyl ether

Assessment of repeated dose toxicity The substance may cause damage to the kidney after repeated ingestion of high doses, as shown in animal studies. The substance may cause damage to the liver after repeated ingestion of high doses, as shown in animal studies. The effects were only observed at doses/concentrations not relevant for classification and/or practical use conditions. These effects are not relevant to humans at occupational levels of exposure.

Genetic toxicity

Assessment of mutagenicity The chemical structure does not suggest a specific alert for such an effect. No applicable information available.

Carcinogenicity

Assessment of carcinogenicity Indication of possible carcinogenic effect in animal tests.

Information on Alkyl halide Phosphate

Assessment of carcinogenicity Indication of possible carcinogenic effect in animal tests. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Reproductive toxicity

Assessment of reproduction toxicity Based on available data, the classification criteria are not met.

Teratogenicity

Assessment of teratogenicity The substance caused malformations/developmental toxicity in laboratory animals.

Information on 1,2-dimethylimidazole

Assessment of teratogenicity The results of animal studies gave indication of a developmental toxic effects. Effects observed at maternally toxic doses.

Information on Hexanoic acid, 2-ethyl-, bismuth(3+) salt

Assessment of teratogenicity Indications of possible developmental toxicity/teratogenicity were seen in animal studies. The product has not been tested. The statement has been derived from the properties of the individual components.

Information on ethylene glycol

Assessment of teratogenicity Developmental toxicity was observed after oral ingestion of high doses in studies with rats and mice, but this effect was not seen in a study with rabbits. Mechanistic studies show that the rabbit is the relevant species for the classification for human health. As such, and since ethylene glycol is not a developmental toxicant in the rabbit, no classification is warranted.

Information on 2-ethylhexanoic acid

Assessment of teratogenicity Indications of possible developmental toxicity/teratogenicity were seen in animal studies.

Other Information

The product has not been tested. The statement has been derived from the properties of the individual components.

Medical conditions aggravated by overexposure

Individuals with allergic history or pre-existing dermatitis should use extra precautions when handling this product. The substance may cause sensitization of the skin in particularly sensitive individuals.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components.

Persistence and degradability

Assessment biodegradation and elimination (H₂O)

Poorly biodegradable.

Elimination information

Poorly biodegradable.

Bioaccumulative potential**Assessment bioaccumulation potential**

Does not significantly accumulate in organisms.

Mobility in soil**Assessment transport between environmental compartments**

Adsorption to solid soil phase is not expected.

Additional information**Adsorbable organically-bound halogen(AOX):**

This product contains no organically-bound halogen.

Other ecotoxicological advice:

Do not allow to enter soil, waterways or waste water channels. Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

13. Disposal considerations

Waste disposal of substance:

Incinerate or dispose of in a licensed facility. Do not discharge substance/product into sewer system.

Container disposal:

Do not reuse empty containers. Under no circumstances should empty drums be burned or cut open with gas or electric torch as toxic decomposition products may be liberated. Steel drums must be emptied and can be sent to a licensed drum reconditioner for reuse, a scrap metal dealer or an approved landfill. Do not attempt to refill or clean containers since residue is difficult to remove.

14. Transport Information

Land transport

USDOT

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations**Registration status:**

Chemical	TSCA, US
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All substances are TSCA listed and active.

EPCRA 311/312 (Hazard categories) Refer to SDS section 2 for GHS hazard classes applicable for this product.

State regulations

State RTK	CAS Number	Chemical name
NJ	Trade Secret	Proprietary Polyol
PA	Trade Secret	Proprietary Polyol
	Trade Secret	Hydroxyalkyl ether

	123-91-1	1,4-dioxane
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Safe Drinking Water & Toxic Enforcement Act, CA Prop. 65:

WARNING This product can expose you to chemicals including 1,4-DIOXANE, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov.

NFPA Hazard codes:

Health: 3	Fire: 1	Reactivity: 1	Special:
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HMIS III rating

Health: 3	Flammability: 1	Physical hazard: 1
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16. Other information

Prepared By IPS Technical Service Department.

Revision Date 18-Sep-2026

Revision Note Version 2.0.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

END OF SAFETY DATA SHEET