

Safety Data Sheet acc. to OSHA HCS

Printing date 08/11/2026

Reviewed on 08/11/2026

1 Identification

- **Product identifier**
- **Trade name:** 977B FT POLYURETHANE BINDER
- **Article number:** 977B
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 NorthStar is a product of Lusid Technologies Inc
 4725 S Camp Kearns Road
 Kearns, UT 84118
 (801) 966-5300
 info@lusidtechnologies.com
- **Information department:** Product safety department
- **Emergency telephone number:**
 24 Hrs Emergency Contact:
 INFOTRAC
 1-800-535-5053

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids 2

H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Carcinogenicity 1A

H350 May cause cancer.

Specific Target Organ Toxicity - Repeated Exposure 2
 H373 May cause damage to the hearing organs through prolonged or repeated exposure.



GHS07

Sensitization - Skin 1

H317 May cause an allergic skin reaction.

- **Additional information:**

The full text of the classification and labeling elements mentioned is given in Section 16.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS02



GHS07



GHS08

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/11/2026

Reviewed on 08/11/2026

Trade name: 977B FT POLYURETHANE BINDER

(Contd. of page 1)

· **Signal word** Danger

· **Hazard-determining components of labeling:**

ethylbenzene

bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate

ethanol

· **Hazard statements**

Highly flammable liquid and vapor.

May cause an allergic skin reaction.

May cause cancer.

May cause damage to the hearing organs through prolonged or repeated exposure.

· **Precautionary statements**

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.

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Do not breathe dust/fume/gas/mist/vapors/spray.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves/protective clothing/eye protection/face protection.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

If exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

Get medical advice/attention if you feel unwell.

If skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

In case of fire: Use CO₂, powder or water spray to extinguish.

Store in a well-ventilated place. Keep cool.

Store locked up.

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

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 0

Fire = 3

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = *0

Fire = 3

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable· **vPvB:** Not applicable

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

123-86-4 n-butyl acetate

10-25%

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/11/2026

Reviewed on 08/11/2026

Trade name: 977B FT POLYURETHANE BINDER

(Contd. of page 2)

110-43-0	heptan-2-one	10-25%
1330-20-7	xylene	2.5-10%
100-41-4	ethylbenzene	≤2.5%
41556-26-7	bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate	≤2.5%
64-17-5	ethanol	≤2.5%
123-54-6	pentane-2,4-dione	≤2.5%
67-56-1	methanol	≤2.5%

4 First-aid measures

- **Description of first aid measures**

- **General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

- **After inhalation:**

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

- **After eye contact:** Rinse opened eye for several minutes under running water.

- **After swallowing:** If symptoms persist consult doctor.

- **Information for doctor:**

- **Most important symptoms and effects, both acute and delayed**

No further relevant information available.

- **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**

- **Suitable extinguishing agents:**

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

- **For safety reasons unsuitable extinguishing agents:** Water with full jet

- **Special hazards arising from the substance or mixture**

During heating or in case of fire poisonous gases are produced.

- **Advice for firefighters**

- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

- **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

- **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/11/2026

Reviewed on 08/11/2026

Trade name: 977B FT POLYURETHANE BINDER

(Contd. of page 3)

· Protective Action Criteria for Chemicals

· PAC-1:

123-86-4	<i>n</i> -butyl acetate	5.0 ppm
110-43-0	heptan-2-one	75 ppm
1330-20-7	xylene	130 ppm
100-41-4	ethylbenzene	33 ppm
64-17-5	ethanol	1800 ppm
123-54-6	pentane-2,4-dione	40 ppm
67-56-1	methanol	530 ppm
122-99-6	2-phenoxyethanol	5.7 mg/m ³
77-58-7	dibutyltin dilaurate	1.1 mg/m ³
67-63-0	propan-2-ol	400 ppm

· PAC-2:

123-86-4	<i>n</i> -butyl acetate	200 ppm
110-43-0	heptan-2-one	130 ppm
1330-20-7	xylene	920 ppm
100-41-4	ethylbenzene	1100 ppm
64-17-5	ethanol	3300 ppm
123-54-6	pentane-2,4-dione	110 ppm
67-56-1	methanol	2100 ppm
122-99-6	2-phenoxyethanol	42 mg/m ³
77-58-7	dibutyltin dilaurate	3.8 mg/m ³
67-63-0	propan-2-ol	2000 ppm

· PAC-3:

123-86-4	<i>n</i> -butyl acetate	3000 ppm
110-43-0	heptan-2-one	800 ppm
1330-20-7	xylene	2500 ppm
100-41-4	ethylbenzene	1800 ppm
64-17-5	ethanol	15000 ppm
123-54-6	pentane-2,4-dione	670 ppm
67-56-1	methanol	7200 ppm
122-99-6	2-phenoxyethanol	250 mg/m ³
77-58-7	dibutyltin dilaurate	23 mg/m ³
67-63-0	propan-2-ol	12000 ppm

7 Handling and storage

· Handling:

· Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

· Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

(Contd. on page 5)

USA

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/11/2026

Reviewed on 08/11/2026

Trade name: 977B FT POLYURETHANE BINDER

(Contd. of page 4)

- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the remaining constituent has no known exposure limits.

123-86-4 n-butyl acetate

PEL	Long-term value: 710 mg/m ³ , 150 ppm
REL	Short-term value: 950 mg/m ³ , 200 ppm Long-term value: 710 mg/m ³ , 150 ppm
TLV	Short-term value: 712 mg/m ³ , 150 ppm Long-term value: 238 mg/m ³ , 50 ppm

110-43-0 heptan-2-one

PEL	Long-term value: 465 mg/m ³ , 100 ppm
REL	Long-term value: 465 mg/m ³ , 100 ppm
TLV	Long-term value: 50 ppm

1330-20-7 xylene

PEL	Long-term value: 435 mg/m ³ , 100 ppm
REL	Short-term value: 655 mg/m ³ , 150 ppm Long-term value: 435 mg/m ³ , 100 ppm
TLV	Long-term value: 20 ppm BEI, A4

100-41-4 ethylbenzene

PEL	Long-term value: 435 mg/m ³ , 100 ppm
REL	Short-term value: 545 mg/m ³ , 125 ppm Long-term value: 435 mg/m ³ , 100 ppm
TLV	Long-term value: 20 ppm OTO, BEI, A3

64-17-5 ethanol

PEL	Long-term value: 1900 mg/m ³ , 1000 ppm
REL	Long-term value: 1900 mg/m ³ , 1000 ppm
TLV	Short-term value: 1880 mg/m ³ , 1000 ppm A3

123-54-6 pentane-2,4-dione

TLV	Long-term value: 102 mg/m ³ , 25 ppm Skin
-----	---

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/11/2026

Reviewed on 08/11/2026

Trade name: 977B FT POLYURETHANE BINDER

(Contd. of page 5)

67-56-1 methanol

PEL	Long-term value: 260 mg/m ³ , 200 ppm
REL	Short-term value: 325 mg/m ³ , 250 ppm Long-term value: 260 mg/m ³ , 200 ppm Skin
TLV	Short-term value: 328 mg/m ³ , 250 ppm Long-term value: 262 mg/m ³ , 200 ppm Skin; BEI-C

· **Ingredients with biological limit values:****1330-20-7 xylene**

BEI	0.3 g/g creatinine Medium: urine Time: end of shift Parameter: Methylhippuric acids
-----	--

100-41-4 ethylbenzene

BEI	0.15 g/g creatinine Medium: urine Time: end of shift Parameter: Sum of mandelic acid and phenylglyoxylic acid (nonspecific)
-----	--

67-56-1 methanol

BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)
-----	---

· **Additional information:** The lists that were valid during the creation were used as basis.· **Exposure controls**· **Personal protective equipment:**· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/11/2026

Reviewed on 08/11/2026

Trade name: 977B FT POLYURETHANE BINDER

(Contd. of page 6)

· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:

Liquid

Color:

Whitish

· Odor:

Characteristic

· Odor threshold:

Not determined

· pH-value:

Not determined (pH N/A in solvent coatings)

· Change in condition

Melting point/Melting range:

Undetermined

Boiling point/Boiling range:

124-128 °C (255.2-262.4 °F)

· Flash point:

13 °C (55.4 °F)

· Flammability:

Highly flammable.

· Auto igniting:

370 °C (698 °F)

· Decomposition temperature:

Not determined

· Ignition temperature:

Product is not selfigniting.

· Danger of explosion:

Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· Explosion limits:

Lower:

1 Vol %

Upper:

7.5 Vol %

· Vapor pressure at 20 °C (68 °F):

10.7 hPa (8 mm Hg)

· Vapor pressure at 50 °C (122 °F):

55 hPa (41.3 mm Hg)

· Density at 20 °C (68 °F):

1.0215 g/cm³ (8.5244 lbs/gal)

· Relative density

Not determined

· Vapor density

Not determined

· Evaporation rate

Not determined

· Solubility in / Miscibility with

Water:

Not miscible or difficult to mix.

· Partition coefficient (n-octanol/water): Not determined

· Viscosity:

Dynamic at 20 °C (68 °F):

1,300 mPas

Kinematic:

Not determined

· Solvent content:

Organic solvents:

40.0 %

VOC content:

40.05 %

361.5 g/l / 3.02 lb/gal

Solids content:

64.6 %

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/11/2026

Reviewed on 08/11/2026

Trade name: 977B FT POLYURETHANE BINDER

(Contd. of page 7)

· Other information

No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

110-43-0 heptan-2-one

Oral	LD50	1,670 mg/kg (rat)
Dermal	LD50	12,600 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

1330-20-7	xylene	3
100-41-4	ethylbenzene	2B
64-17-5	ethanol	1
67-63-0	propan-2-ol	3

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/11/2026

Reviewed on 08/11/2026

Trade name: 977B FT POLYURETHANE BINDER

(Contd. of page 8)

- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable
- **vPvB:** Not applicable
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- | | |
|---|----------------------------|
| · UN-Number | UN1263 |
| · DOT, IMDG, IATA | |
| · UN proper shipping name | Paint |
| · DOT | PAINT |
| · IMDG, IATA | |
| · Transport hazard class(es) | |
| · DOT | |
|  | |
| · Class | 3 Flammable liquids |
| · Label | 3 |
| · IMDG, IATA | |
|  | |
| · Class | 3 Flammable liquids |
| · Label | 3 |
| · Packing group | III |
| · DOT, IMDG, IATA | |
| · Environmental hazards: | |
| · Marine pollutant: | No |
| · Special precautions for user | Warning: Flammable liquids |
| · Hazard identification number (Kemler code): | 30 |
| · EMS Number: | F-E, S-E |

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/11/2026

Reviewed on 08/11/2026

Trade name: 977B FT POLYURETHANE BINDER

(Contd. of page 9)

· Stowage Category	A
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 1263 PAINT, 3, III

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

1330-20-7	xylene
100-41-4	ethylbenzene
67-56-1	methanol
122-99-6	2-phenoxyethanol
67-63-0	propan-2-ol

· **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

· **Hazardous Air Pollutants**

1330-20-7	xylene
100-41-4	ethylbenzene
67-56-1	methanol
122-99-6	2-phenoxyethanol

· **Proposition 65**

· **Chemicals known to cause cancer:**

100-41-4	ethylbenzene	1.781%
----------	--------------	--------

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

64-17-5	ethanol	0.666%
67-56-1	methanol	0.272%

(Contd. on page 11)

USA

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/11/2026

Reviewed on 08/11/2026

Trade name: 977B FT POLYURETHANE BINDER

(Contd. of page 10)

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

1330-20-7	xylene	I
100-41-4	ethylbenzene	D

· **TLV (Threshold Limit Value)**

1330-20-7	xylene	A4
100-41-4	ethylbenzene	A3
64-17-5	ethanol	A3
77-58-7	dibutyltin dilaurate	A4
67-63-0	propan-2-ol	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS02 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**

ethylbenzene

bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate

ethanol

· **Hazard statements**

Highly flammable liquid and vapor.

May cause an allergic skin reaction.

May cause cancer.

May cause damage to the hearing organs through prolonged or repeated exposure.

· **Precautionary statements**

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.

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Do not breathe dust/fume/gas/mist/vapors/spray.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves/protective clothing/eye protection/face protection.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

If exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

Get medical advice/attention if you feel unwell.

If skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

In case of fire: Use CO₂, powder or water spray to extinguish.

Store in a well-ventilated place. Keep cool.

Store locked up.

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

(Contd. on page 12)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/11/2026

Reviewed on 08/11/2026

Trade name: 977B FT POLYURETHANE BINDER

(Contd. of page 11)

- **National regulations:**
- **Additional classification according to Decree on Hazardous Materials:**
Carcinogenic hazardous material group III (dangerous).
- **Information about limitation of use:**
Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Environment protection department.
- **Contact:** Product Safety Dept.
- **Date of preparation / last revision** 08/11/2026 / 1
- **Abbreviations and acronyms:**
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 NFPA: National Fire Protection Association (USA)
 HMIS: Hazardous Materials Identification System (USA)
 VOC: Volatile Organic Compounds (USA, EU)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative
 NIOSH: National Institute for Occupational Safety
 OSHA: Occupational Safety & Health
 TLV: Threshold Limit Value
 PEL: Permissible Exposure Limit
 REL: Recommended Exposure Limit
 BEI: Biological Exposure Limit
 Flammable Liquids 2: Flammable liquids – Category 2
 Sensitization - Skin 1: Skin sensitisation – Category 1
 Carcinogenicity 1A: Carcinogenicity – Category 1A
 Specific Target Organ Toxicity - Repeated Exposure 2: Specific target organ toxicity (repeated exposure) – Category 2
- *** Data compared to the previous version altered.**

-USA-