



SECTION 1. IDENTIFICATION

Product name : Sikadur®-673 Part B

Other means of identification : No data available

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Recommended use of the chemical and restrictions on use : For further information, refer to product data sheet.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Acute toxicity (Inhalation) : Category 4

Skin corrosion : Category 1B

Serious eye damage : Category 1

Skin sensitization : Sub-category 1A

Reproductive toxicity : Category 1B

Specific target organ toxicity - repeated exposure : Category 1

GHS label elements

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.



H332 Harmful if inhaled.
H360 May damage fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.

Precautionary Statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe mist or vapors.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Additional Labeling

There are no ingredients with unknown acute toxicity used in a mixture at a concentration \geq 1%.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

**Components**

Chemical name	CAS-No.	Classification	Concentration (% w/w)
Polyoxypropylene diamine	9046-10-0	Skin Corr. 1C; H314 Eye Dam. 1; H318	>= 60 - < 80
2-piperazin-1-ylethylamine	140-31-8	Acute Tox. 3; H311 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Repr. 2; H361 STOT RE 1; H372	>= 5 - < 10
2,2'-iminodiethylamine	111-40-0	Acute Tox. 4; H302 Acute Tox. 2; H330 Acute Tox. 4; H312 Skin Corr. 1B; H314 Skin Sens. 1; H317 STOT SE 3; H335	>= 5 - < 10
Fatty acids, tall-oil, reaction products with tetraethylenepentamine	68953-36-6	Skin Corr. 1C; H314 Skin Sens. 1A; H317	>= 5 - < 10
triethylenetetramine	112-24-3	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1; H317	>= 1 - < 5
[3-(2,3-epoxypropyl)trimethoxysilane	2530-83-8	Eye Dam. 1; H318	>= 1 - < 5
Phenol, 4-nonyl, branched	84852-15-3	Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 Repr. 2; H361	>= 1 - < 5
oxirane, mono[(C12-14-alkyloxy)methyl]derivatives	68609-97-2	Skin Irrit. 2; H315 Skin Sens. 1; H317	>= 1 - < 5
4,4'-isopropylidenediphenol	80-05-7	Eye Dam. 1; H318 Skin Sens. 1; H317 Repr. 1B; H360 STOT SE 3; H335	>= 1 - < 5
3,6,9-triazaundecamethylenediamine	112-57-2	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1; H317	>= 0.1 - < 1

Actual concentration or concentration range is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.



- If inhaled : Move to fresh air.
Consult a physician after significant exposure.

- In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.

- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Keep eye wide open while rinsing.

- If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do not induce vomiting without medical advice.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
Take victim immediately to hospital.

- Most important symptoms and effects, both acute and delayed : Health injuries may be delayed.
corrosive effects
sensitizing effects
toxic effects for reproduction
Respiratory disorder
Allergic reactions
Headache
Dermatitis
May cause an allergic skin reaction.
Causes serious eye damage.
Harmful if inhaled.
May damage fertility or the unborn child.
Causes damage to organs through prolonged or repeated exposure.
Causes severe burns.

- Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.



SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Deny access to unprotected persons.

- Environmental precautions : Do not flush into surface water or sanitary sewer system.
If the product contaminates rivers and lakes or drains inform respective authorities.
Local authorities should be advised if significant spillages cannot be contained.

- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.

- Advice on safe handling : Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
Pregnant women or women of child-bearing age should not be exposed to this product.
Follow standard hygiene measures when handling chemical products.

- Conditions for safe storage : Store in original container.
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Store in accordance with local regulations.

- Materials to avoid : Explosives
Oxidizing agents
Poisonous gases
Dangerous when wet
Flammable solids
Organic peroxides



Poisonous liquids
Spontaneously Combustible Substances

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
2,2'-iminodiethylamine	111-40-0	TWA	1 ppm 4.2 mg/m ³	CA AB OEL
		TWA	1 ppm	CA BC OEL
		TWAEV	1 ppm 4.2 mg/m ³	CA QC OEL
triethylenetetramine	112-24-3	TWA	1 ppm	ACGIH
		TWA	0.5 ppm 3 mg/m ³	CA ON OEL

Engineering measures : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment

- Respiratory protection** : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.
- The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Eye protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.
- Skin and body protection** : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
- Hygiene measures** : Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Remove contaminated clothing and protective equipment



before entering eating areas.
Wash thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	amber
Odor	:	ammoniacal
Odor Threshold	:	No data available
pH	:	not determined
Melting point/range / Freezing point	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	ca. 130 °C (266 °F) (Method: closed cup)
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	0.1 hpa
Relative vapor density	:	No data available
Density	:	0.968 g/ml (23 °C (73 °F))
Solubility(ies)		
Water solubility	:	completely miscible
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available



Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	not determined
Explosive properties	:	No data available
Oxidizing properties	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	The product is chemically stable.
Possibility of hazardous reactions	:	Stable under recommended storage conditions.
Conditions to avoid	:	No data available
Incompatible materials	:	No data available
Hazardous decomposition products	:	No decomposition if stored and applied as directed.

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Harmful if inhaled.

Components:**2-piperazin-1-ylethylamine:**

Acute oral toxicity	:	LD50 Oral (Rat): 2,097 mg/kg
Acute dermal toxicity	:	LD50 Dermal (Rabbit): ca. 866 mg/kg

2,2'-iminodiethylamine:

Acute oral toxicity	:	LD50 Oral (Rat): 1,553 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 0.071 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 Dermal (Rat): 1,045 mg/kg

triethylenetetramine:

Acute oral toxicity	:	LD50 Oral (Rat): 1,716 mg/kg
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Acute dermal toxicity : LD50 Dermal (Rabbit): 1,465 mg/kg

[3-(2,3-epoxypropoxy)propyl]trimethoxysilane:

Acute oral toxicity : LD50 Oral (Rat): 7,010 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 Dermal (Rabbit): 4,248 mg/kg

Phenol, 4-nonyl, branched:

Acute oral toxicity : LD50 Oral (Rat): 1,412 mg/kg

Acute dermal toxicity : LD50 Dermal (Rabbit): 3,160 mg/kg

3,6,9-triazaundecamethylenediamine:

Acute oral toxicity : LD50 Oral (Rat): 1,716.2 mg/kg

Acute dermal toxicity : LD50 Dermal (Rat): 1,260 mg/kg

Skin corrosion/irritation

Causes severe burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitization

Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC Not applicable

Not applicable

OSHA Not applicable

Not applicable

NTP Not applicable

Not applicable

**Reproductive toxicity**

May damage fertility or the unborn child.

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****2-piperazin-1-ylethylamine:**

Toxicity to fish : LC50 (Fish): > 100 mg/l
Exposure time: 96 h

Fatty acids, tall-oil, reaction products with tetraethylenepentamine:**triethylenetetramine:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia): 10 - 100 mg/l
aquatic invertebrates Exposure time: 48 h

Toxicity to algae/aquatic : EC50 (Pseudokirchneriella subcapitata (green algae)): 10 -
plants 100 mg/l
Exposure time: 72 h

[3-(2,3-epoxypropoxy)propyl]trimethoxysilane:

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 55 mg/l
Exposure time: 96 h

Phenol, 4-nonyl, branched:**Persistence and degradability**

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

**Other adverse effects****Product:**

Additional ecological information : Do not empty into drains; dispose of this material and its container in a safe way.
 Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 May be harmful to the environment if released in large quantities.
 Water polluting material.

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION**International Regulations****IATA-DGR**

UN/ID No. : UN 2735
 Proper shipping name : Polyamines, liquid, corrosive, n.o.s.
 (Polyoxypropylenediamine (polymer))
 Class : 8
 Packing group : II
 Labels : Corrosive
 Packing instruction (cargo aircraft) : 855
 Packing instruction (passenger aircraft) : 851

IMDG-Code

UN number : UN 2735
 Proper shipping name : POLYAMINES, LIQUID, CORROSIVE, N.O.S.
 (Polyoxypropylenediamine (polymer))
 Class : 8
 Packing group : II
 Labels : 8
 EmS Code : F-A, S-B
 Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

**Domestic regulation****TDG**

UN number	:	UN 2735
Proper shipping name	:	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Polyoxypropylenediamine (polymer))
Class	:	8
Packing group	:	II
Labels	:	8
ERG Code	:	153
Marine pollutant	:	no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION**Canadian lists**

No substances are subject to a Significant New Activity Notification.

SECTION 16. OTHER INFORMATION**Full text of other abbreviations**

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	:	Canada. British Columbia OEL
CA ON OEL	:	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
CA QC OEL	:	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
ACGIH / TWA	:	8-hour, time-weighted average
CA AB OEL / TWA	:	8-hour Occupational exposure limit
CA BC OEL / TWA	:	8-hour time weighted average
CA ON OEL / TWA	:	Time-Weighted Average Limit (TWA)
CA QC OEL / TWAEV	:	Time-weighted average exposure value
ADR	:	Accord européen relatif au transport international des marchandises Dangereuses par Route
CAS	:	Chemical Abstracts Service
DNEL	:	Derived no-effect level
EC50	:	Half maximal effective concentration
GHS	:	Globally Harmonized System
IATA	:	International Air Transport Association
IMDG	:	International Maritime Code for Dangerous Goods
LD50	:	Median lethal dosis (the amount of a material, given all at



	once, which causes the death of 50% (one half) of a group of test animals)
LC50	: Median lethal concentration (concentrations of the chemical in air that kills 50% of the test animals during the observation period)
MARPOL	: International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978
OEL	: Occupational Exposure Limit
PBT	: Persistent, bioaccumulative and toxic
PNEC	: Predicted no effect concentration
REACH	: Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency
SVHC	: Substances of Very High Concern
vPvB	: Very persistent and very bioaccumulative

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