

Product: **ZYCOTHERM SP**

SDS No.: Version 1.0

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Date 07.01.2022

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Identification of the product

Identification of the mixture: ZYCOTHERM SP

1.2. Relevant identified uses of the substance or mixture and uses advised

Use of the Substance/Mixture: Additive for addition to Bitumen modification and for Aggregate treatment.

1.3. Details of the supplier of the safety data sheet

Supplier Zydex Industries
61, Gotri Sevasi Road,
Gotri, Vadodara, Gujarat,
India -390 021
Telephone: 91-265-3312000
www.zydexindustries.com

E-mail address info@zydexindustries.com

1.4. Emergency telephone number

 Dr. Ajay Ranka (+91) 9825008145

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008):

Acute toxicity, Oral - Category 4, H302
Acute toxicity, Inhalation - Category 4, H332
Eye irritation - Category 2, H319

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Annex	Hazard class and category	Hazard statement code(s)
A.4S	skin sensitization	Cat. 1 (Skin Sens. 1) H317

Remarks

Hazards not otherwise classified

- May be harmful if inhaled (GHS category 5: acutely toxic - inhalation).
- May be harmful if swallowed (GHS category 5: acutely toxic - oral).

2.2. Hazard Pictogram



Signal word:

Warning

Label Elements

Product labelling according to Regulation (EC) 1272/2008 (CLP): Benzyl Alcohol

Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Annex III. Regulations in individual countries/regions may determine which statements are required on the product label. See product label for specifics.

Hazard statements:

- H302 Harmful if swallowed.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.

Precautionary statements:

Prevention:

- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- P264 Wash thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear eye protection/face protection.

Response:

- P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P330 Rinse mouth.
- P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337 + P313: If eye irritation persists: Get medical advice/attention.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.

Disposal:

- P501: Dispose of contents/container in accordance with local, regional and international regulations.

2.3. Other hazards

PBT/vPvB criteria: The product is not PBT/ vPvB.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance/Synonyms- Organosilane compounds

Component	CAS No.	Concentration (%)
Alkoxy-alkylsilyl compounds	-	39-41
Benzyl Alcohol	100-51-6	58-60
Ethylene Glycol	107-21-1	1-2

4. FIRST AID MEASURES

4.1. Description of necessary first-aid measures:

General advice:

Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation:

Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell.

Skin contact:

Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/physician. Wash contaminated clothing before reuse.

Eye contact:

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness persists.

Ingestion:

Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms/effects, acute and delayed:

Dizziness, Drowsiness, headache, irritation, nausea, pre-existing sensitization, skin and/or respiratory disorders or diseases may be aggravated.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Treatment: Treat symptomatically.

5. FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media : Water fog or fine spray, dry chemical fire extinguisher. Carbon dioxide fire extinguisher. Foam. Alcohol Resistance foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media : Do not use direct water stream. May spread fire.

5.2. Special hazards arising from the substance or mixture:

Hazard Combustion products- During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

5.3. Advice for firefighters:

Firefighting procedures:

Keep people away. Isolate fire & deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special protective actions for fire-fighters:

Wear positive –pressure self – contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures:

General measures:

Remove ignition sources. Use special care to avoid static electric charges. No naked lights. No smoking.

For non-emergency personnel

Emergency procedures: Evacuate unnecessary personnel. Stop leak without risks if possible. Avoid contact with skin, eyes and clothing. Avoid inhalation of vapors.

For emergency responders:

Protective equipment Equip clean-up crew with proper protection. Avoid inhalation of vapors. Avoid contact with skin and eyes.

For emergency procedures:

Ventilate area.

6.2. Environmental precautions:

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and materials for containment and cleaning up:

Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

7. HANDLING AND STORAGE

7.1. Precaution for Safer handling:

- Use Hand gloves and Safety glass for handling spill.
- Ensure thorough ventilation of stores and work areas.
- Keep away from heat and ignition source, Keep away from sparks.
- Product reacts with moisture and generates polymeric material and alcohols.
- Wash thoroughly after handling. Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapour), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Conditions for safe storage, including any incompatibilities:

Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables - area. Do not store near perchlorates, peroxides, chromic acid or nitric acid.

Storage Stability: Keep away from moisture.

Shelf life: 48 months

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters:

Exposure Limit Values

Substance	EU OELV	EU IOELV	ACGIH-TWA	ACGIH - STEL	UKWELs
Ethylene Glycol	40 ppm	40 ppm	100 mg/m ³	40 ppm	TWA 52 ppm, STEL 104 ppm
Benzyl Alcohol	N/E	N/E	N/E	N/E	N/E

N/E- Not Established (No exposure limits established for listed substances for listed country/ region/organization)

Exposure controls:

Personal Protective equipment	:	Avoid all unnecessary exposure.
Hand Protection	:	Wear Protective gloves.
Eye Protection	:	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR1910.133 or European Standard EN166.
Skin and body protection	:	Wear appropriate protective gloves to prevent skin exposure. Wear appropriate protective clothing to prevent skin exposure.
Respiratory protection	:	A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.
Thermal Hazard Protection	:	Not required for normal conditions of use.
Environmental exposure controls	:	Avoid release to the environment.
Other Information	:	Do not eat, drink or smoke during use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid
Colour	Pale Yellow to brownish Yellow
Odour	Slight Aromatic
Odour Threshold	No data available
Melting point	< -10°C
Freezing point	< -10°C
Boiling point	>200°C
Flash point	>75°C and > 250 °C [2 wt. % in Bitumen] (closed cup method)
Evaporation rate	No data available
Partition coefficient	No data available
Auto ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	<150 CPS (at 30±2°C)
Kinematic viscosity	No data available
Viscosity, dynamic	No data available
Explosive properties	Not Explosive
Oxidizing properties	Not Oxidizing
Molecular weight	N/A
Flammability	No data available
Vapor pressure	No data available
Density	1.03 ± 0.01 grams/cc (at 30±2°C)
Relative vapor density	(Air =1) >1 calculated
Water solubility	Water dispersible
Lower explosion limit	No test data available
Upper explosion limit	No test data available

[Note: Physical data presented above are typical values and should not be construed as a specification]

10. STABILITY AND REACTIVITY

- 10.1. Reactivity:** It can react with Silanol and Hydroxyl group containing molecules.
- 10.2. Chemical stability:** Stable under normal conditions.
- 10.3. Possibility of hazardous reactions:** Under fire conditions closed containers may rupture or explode. Can form explosive mixture with air.
- 10.4. Conditions to avoid:** Direct sunlight. Extremely high or low temperatures and moisture.
- 10.5. Incompatible materials to avoid:** Water, Acids, oxidizing agents.
- 10.6. Hazardous decomposition products:** Carbon monoxide, Carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Oral:

Toxicity if swallowed- LD50 >2000 mg/kg.

Inhalation:

At 150°C, the silane component is solid and has no vapor pressure, exposure to vapor is minimal due to low volatility of associated solvents.

Dermal:

Prolonged skin contact is likely to result in mild irritation. Testing was done with mice bare skin - PSI Value is 0.33 (PSI Range- 0 for no irritation and 0-2 for mild irritation).

Skin Irritation:

Brief contact is essentially none irritating to skin.

Serious Eye damage/Eye irritation:

May cause slight temporary eye irritation. Corneal injury is unlikely.

Respiratory or Skin Sensitization:

For skin sensitization- No relevant data available

For respiratory sensitization- No relevant data available

Mutagenicity:

Not classified (based on available data, the classification criteria are not met). BENZYL ALCOHOL: Ames testing showed no mutagenic activity and mixed results both positive and negative were observed from other in-vitro genotoxicity assays. Benzyl alcohol showed no genotoxicity during in-vivo testing. The weight of the evidence indicates this material is not mutagenic or clastogenic.

Carcinogenicity:

Not classified (based on available data, the classification criteria are not met).

BENZYL ALCOHOL: Under conditions of a two-year NTP gavage study, there was no evidence of carcinogenic activity for rats or mice receiving 200 or 400 mg/kg.

Reproductive Toxicity:

Not classified (based on available data, the classification criteria are not met).

BENZYL ALCOHOL: No effects on reproductive organs were observed in subchronic and long- term studies with rats and mice. Developmental toxicity oral study, mouse: NOAEL (no- observed-adverse-effect level), maternal toxicity=550 mg/kg bw/day; NOAEL, developmental toxicity=550 mg/kg bw/day. No developmental effects were observed in absence of maternal toxicity.

Components influencing toxicity:

Chemical Name	LC50 Inhalation	Species	LD50 Oral	Species	LD50 Skin	Species
Benzyl Alcohol	>4178 /m ³ 4 hrs Aerosol	Rat/ adult	1620 mg/kg	Rat/adult	N/E	

BENZYLALCOHOL: Long term animal studies indicate a gavage NOAEL (no-observed-adverse- effect-level) >=400 mg/kg/day for rats and >=200 mg/kg/day for mice. At higher doses, effects on bodyweights, brain lesions, thymus, skeletal muscle, kidneys, liver and central nervous system were observed. In a 4-week inhalation study in rats on Benzyl Alcohol, no adverse effects were observed with a no-observed-adverse-effect level (NOAEC) of 1,072 mg/m3.

Specific target organ toxicity:

Single exposure : Based on available data, the classification criteria are not met.

Repeated exposure : Based on available data, the classification criteria are not met.

Aspiration hazard : Not relevant

12. ECOLOGICAL INFORMATION

Chemical Name	Fish 96hr LC50	Species	Fish 96hr LC50	Species Fish	Chronic NOEC	Species
Benzyl Alcohol	45mg/l	Pimephalis promelas (Fathead minnow)	>100 mg/l	Oryzias latipes (Medaka)	N/E	

Chemical Name	Invertebrates 48 hr EC50	Species	Invertebrates 24 hr EC50	Species	Invertebrates Chronic NOEC	Species
Benzyl Alcohol	230 mg/l	Daphnia magna	440 mg/l	Pseudokirchneriella subcapitata	310 mg/l (72 hours)	Pseudokirchneriella subcapitata

Chemical Name	Algal 96hr EC50	Species	Algal 72hr EC50 growth rate	Species	Algal Chronic NOEC	Species
Benzyl Alcohol	N/E		770 mg/L	Pseudokirchneriella subcapitata	310 mg/L (72 hours)	Pseudokirchneriella subcapitata

12.1. Persistence and degradability : Not established

12.2. Bio accumulative potential: Not established

12.3. Mobility in soil – Distribution among environmental compartments: No additional information available.

12.4. Other adverse effects: Avoid release to the environment

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods:

- **Waste disposal recommendations-** Dispose in a safe manner in accordance with local/national regulations. Dispose of this material and its container to hazardous or special waste collection point.
- **Additional information-** Handle empty containers with care because residual vapours are flammable.
- **Ecology-waste materials-** Hazardous waste due to toxicity. Avoid release to the environment.

14. TRANSPORT INFORMATION

Regulation	14.1. UN number	14.2. UN proper shipping name	14.3. Class*	Label	14.4. PG*	14.5. Environmental hazards	14.6. Special precautions for user
ADR	Not Regulated	Not Regulated	NA	NA	NA	Not Classified	
ADN	Not Regulated	Not Regulated	NA	NA	NA	Not Classified	
RID	Not Regulated	Not Regulated	NA	NA	NA	Not Classified	
IATA Cargo	Not Regulated	Not Regulated	NA	NA	NA	Not Classified	
IATA Passenger	Not Regulated	Not Regulated	NA	NA	NA	Not Classified	
IMDG	Not Regulated	Not Regulated	NA	NA	NA	Not Classified	

Description:

- 14.3. Transport hazard class (es)
- 14.4. Packing group

15. REGULATORY INFORMATION :

- **EU authorization and/or restrictions on use-** Not Applicable
Other EU Information – REACH Registration No. 01-2120249977-36-0000, 01- 2119492630-38-0005, 01-2119456816-28-0145
National Regulation: No additional information
CA Prop. 65- Ethylene glycol (ingested) - developmental 107-21-1- June 19, 2015
- **INVENTORIES:**
 - EINECS : Compliant
 - TSCA : Compliant
 - ELINCS : Compliant
 - DSL : Compliant
 - REACH EC 1907/2006 Registration : Compliant

16. OTHER INFORMATION

Full text of H, EUH-phrases referred to under sections 2 and 3

H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.

Update:

Safety datasheet sections which have been updated:		Type
1		
2		
3		
4		
5		

Thesaurus:

vPvB : very Persistent and very Bio accumulative
PBT : Persistent, Bio accumulative and Toxic

Zydex Industries urges each customer or recipient of this (M) SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective data shown above. However no warranty express or implied is given. Regulatory requirements are subject to change and may differ between various locations.