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Safety



Bayer MaterialScience

MATERIAL SAFETY DATA SHEET

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Product Safety & Regulatory Affairs
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Pittsburgh, PA 15205-9741
USA

TRANSPORTATION EMERGENCY

CALL CHEMTREC: (800) 424-9300
INTERNATIONAL: (703) 527-3887

NON-TRANSPORTATION

Emergency Phone: Call Chemtrec
Information Phone: (800) 662-2927

1. Product and Company Identification

Product Name: **BAYHYDROL UH 2593/1**
Material Number: 57927910
Chemical Family: Aliphatic Polyurethane Resin Aqueous Dispersion

2. Hazards Identification

Emergency Overview

Caution Color: Milky White **Form:** liquid **Odor:** characteristic, mild.
May cause eye, skin, and respiratory tract irritation. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Irritating gases/fumes may be given off during burning or thermal decomposition. Vapors or mist may be a fire and explosion hazard when exposed to high temperature or ignition. May affect nervous system.

Potential Health Effects

Primary Routes of Entry: Skin Contact, Eye Contact, Ingestion, Inhalation

Medical Conditions Aggravated by Exposure: Skin disorders, Respiratory disorders, Eye disorders

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

Acute Inhalation

For Component: Triethylamine (TEA)

Causes respiratory tract irritation with symptoms of coughing, sore throat and runny nose. May cause nervous system effects which can include symptoms of dizziness, incoordination, headache, numbness, and/or confusion. May cause pulmonary edema with symptoms of breathing difficulty and tightness of chest.

For Component: Acetone

Inhalation of the solvents may cause central nervous system depression with symptoms of nausea, lightheadedness, drowsiness, dizziness and loss of co-ordination.

Chronic Inhalation**For Component: Triethylamine (TEA)**

Prolonged or repeated exposure may result in adverse respiratory effects including cough, tightness of chest and shortness of breath.

For Component: Acetone

Chronic exposure to organic solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage. May cause liver damage.

Acute Skin**For Component: Triethylamine (TEA)**

Toxic by skin absorption. Causes irritation with symptoms of reddening, itching, and swelling.

For Component: Acetone

If sufficient amounts are absorbed, systemic toxicity may occur with symptoms similar to those described in acute inhalation.

Chronic Skin**For Component: Acetone**

May cause defatting of the skin with symptoms of dryness and cracking. Prolonged or repeated skin contact may cause dermatitis with symptoms of red, itchy, dry skin.

Acute Eye**For Component: Triethylamine (TEA)**

Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage. Vapors can cause temporary corneal edema with symptoms of blurred vision or the appearance of halos around bright objects.

For Component: Acetone

May cause corneal injury.

Chronic Eye**For Component: Acetone**

Prolonged vapor contact may cause conjunctivitis.

Ingestion**Acute Ingestion****For Component: Triethylamine (TEA)**

Toxic by ingestion. Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea. May cause digestive tract burns.

Chronic Ingestion**For Component: Triethylamine (TEA)**

May cause liver damage. May cause kidney damage.

Other Effects of Exposure**For Product: BAYHYDROL UH 2593/1**

This product contains an amine neutralizing agent which is bound in the matrix of this product as a salt. This amine salt is considered essentially unreactive at room temperature. Generation of amine vapors is expected when this product is processed (heated) during the drying/hardening of the coating. The health effects statements in this section apply to the amine vapors thus produced.

Carcinogenicity:

No Carcinogenic substances as defined by IARC, NTP and/or OSHA

3. Composition/Information on Ingredients

Hazardous components

The amine listed in this section is used as a neutralizing agent in the product and as such is bound in the matrix of the product as a salt. However, upon processing or drying/hardening of the coating some neutralizing agent (amine) may be released.

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
1 - 2%	Triethylamine (TEA)	121-44-8
0.1 - 1%	Acetone	67-64-1

4. First aid measures

Eye contact

In case of contact, flush eyes with plenty of lukewarm water. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Get medical attention if irritation develops.

Skin contact

In case of skin contact, wash affected areas with soap and water. Immediately remove contaminated clothing and shoes. Get medical attention if irritation develops.

Inhalation

If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if irritation develops.

Ingestion

If ingested, do not induce vomiting unless directed to do so by medical personnel. Get medical attention.

5. Firefighting measures

Suitable extinguishing media: Carbon dioxide (CO₂), Dry chemical, Foam, water spray for large fires.

Special Fire Fighting Procedures

Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture.

Unusual Fire/Explosion Hazards

Vapors or mist may be a fire and explosion hazard when exposed to high temperature or ignition.

6. Accidental release measures

Spill and Leak Procedures

Cover spill with inert material (e. g., dry sand or earth) and collect for proper disposal. Dike or dam spilled material and control further spillage, if possible. Prevent from entering open drains and waterways. Wash spill area with soap and water. Ventilate area to remove vapors or dust.

7. Handling and storage

Storage temperature:

minimum: 4 °C (39.2 °F)
maximum: 40 °C (104 °F)

Storage period

6 Months @ 25 °C (77 °F): after receipt of material by customer

Handling/Storage Precautions

Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling. Keep container closed when not in use. Avoid breathing dust, vapor, or mist. Avoid contact with eyes. Avoid contact with skin or clothing. Protect from freezing.

Further Info on Storage Conditions

Store separate from food products.

8. Exposure controls/personal protection

Triethylamine (TEA) (121-44-8)

US. ACGIH Threshold Limit Values

Time Weighted Average (TWA): 1 ppm

US. ACGIH Threshold Limit Values

Short Term Exposure Limit (STEL): 3 ppm

US. ACGIH Threshold Limit Values

Skin designation: Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

PEL: 25 ppm, 100 mg/m³

US. ACGIH Threshold Limit Values

Hazard Designation: Group A4 Not classifiable as a human carcinogen.

Acetone (67-64-1)

US. ACGIH Threshold Limit Values

Time Weighted Average (TWA): 500 ppm

US. ACGIH Threshold Limit Values

Short Term Exposure Limit (STEL): 750 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

PEL: 1,000 ppm, 2,400 mg/m³

US. ACGIH Threshold Limit Values

Hazard Designation: Group A4 Not classifiable as a human carcinogen.

Industrial Hygiene/Ventilation Measures

General dilution and local exhaust as necessary to control airborne vapors, mists, dusts and thermal decomposition products below appropriate airborne concentration standards/guidelines. Thermal processing operations should be ventilated to control gases and fumes given off during processing. Curing ovens must be ventilated to prevent the build up of explosive atmospheres and to prevent off gases from entering the work place.

Respiratory protection

None required under normal conditions of use., NIOSH approved air-supplied respirator during die cleaning, high temperature processing or when thermal decomposition is suspected.

Hand protection

Permeation resistant gloves., Butyl rubber gloves., Nitrile rubber gloves.

Eye protection

Chemical safety goggles or safety glasses with side-shields.

Skin and body protection

Permeation resistant clothing, Gloves, long sleeved shirts and pants.

Additional Protective Measures

Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product. Store separate from food products.

9. Physical and chemical properties

Form:	liquid
Color:	Milky White
Odor:	characteristic, mild
pH:	7 - 9 (Determined in a 10 % aqueous solution)
Boiling point/boiling range:	ca. 89 °C (192.2 °F) @ 1,013 hPa (DIN 53171)
Flash point:	Not applicable (water based product), however, solid material will support combustion if water has been evaporated.
Lower explosion limit:	Not Established
Upper explosion limit:	Not Established
Vapour pressure:	Approximately 100 hPa @ 20 °C (68 °F) Approximately 317 hPa @ 50 °C (122 °F) Approximately 367 hPa @ 55 °C (131 °F)
Specific Gravity:	Approximately 1.03 @ 20 °C (68 °F) (DIN 53217)
Solubility in Water:	miscible
Autoignition temperature:	ca. 435 °C (815 °F) (DIN 51794)
Bulk density:	Approximately 1,030 kg/m ³ @ 20 °C (68 °F)
Pour point:	ca. -1 °C (30.2 °F) (ISO 3016)

10. Stability and reactivity

Hazardous Reactions

Hazardous polymerisation does not occur.

Stability

Stable

Materials to avoid

Water reactives

Conditions to avoid

Protect from freezing.

Hazardous decomposition products

By Fire and Thermal Decomposition: Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke, Isocyanate, Isocyanic Acid and other undetermined compounds., Hydrogen cyanide

11. Toxicological information

Toxicity Data for BAYHYDROL UH 2593/1

Toxicity Note

Resin

Acute oral toxicity

LD50: > 2,000 mg/kg (rat) (OECD Test Guideline 423)

Toxicological studies of a comparable product.

Skin irritation

rabbit, OECD Test Guideline 404, non-irritant

Toxicological studies of a comparable product.

Eye irritation

rabbit, OECD Test Guideline 405, non-irritant

Toxicological studies of a comparable product.

Mutagenicity

Genetic Toxicity in Vitro:

Salmonella/microsome test (Ames test): negative

Toxicological studies of a comparable product.

Toxicity Data for Triethylamine (TEA)

Acute oral toxicity

LD50: 460 mg/kg (Rat)

Acute inhalation toxicity

LC50: 4.2 - 8.4 mg/l, 4 h (Rat)

Acute dermal toxicity

LD50: 416 - 420 mg/kg (rabbit)

Skin irritation

rabbit, Corrosive

Eye irritation

rabbit, Corrosive

Sensitisation

Did not cause sensitization on laboratory animals.

Repeated dose toxicity

28 wks, inhalation: NOAEL: 1 mg/l, (rat, Male/Female, daily)

Mutagenicity

Genetic Toxicity in Vitro:

Ames: negative (Salmonella typhimurium, Metabolic Activation: with/without)

Carcinogenicity

Rat, female, oral, 1 year, daily,

Did not show carcinogenic effects in animal experiments.

Toxicity Data for Acetone

Acute oral toxicity

LD50: 5,800 mg/kg (Rat)

LD50: 3,000 mg/kg (mouse)

Acute inhalation toxicity

LC50: 50.1 mg/l, 8 h (Rat)

Acute dermal toxicity

LD50: > 9,400 mg/kg (Guinea pig)

LD50: > 5,000 mg/kg (rabbit)

Skin irritation

rabbit, Draize, Exposure Time: 24 h, Slightly irritating

Eye irritation

rabbit, Draize, Exposure Time: 24 h, Moderately irritating

Sensitisation

dermal: non-sensitizer (mouse, Mouse ear swelling test)

Repeated dose toxicity

90 Days, oral: NOAEL: 100 mg/kg, LOAEL: 500 mg/kg, (Rat)

Changes in liver weight. Changes in bladder weight. Changes in blood parameters.

Mutagenicity

Genetic Toxicity in Vitro:

Ames: negative (Salmonella typhimurium, Metabolic Activation: with/without)

Toxicity to Reproduction/Fertility

Other method, oral, daily, (Rat, Male)

No effects on Reproductive parameters observed at doses tested.

Developmental Toxicity/Teratogenicity

Rat, inhalation, 6 hrs/day 7 days/week, NOAEL (teratogenicity): 2,200 ppm,

Teratogenic effects have been observed in animal studies.

12. Ecological information**Ecological Data for BAYHYDROL UH 2593/1****Biodegradation**

39 %, Exposure time: 28 d, i.e. not readily degradable

Ecotoxicological reports on a comparable product

Acute and Prolonged Toxicity to Fish

LC50: > 3,129 mg/l (Danio rerio (zebra fish), 96 h)

Ecotoxicological reports on a comparable product

Toxicity to Microorganisms

EC50: > 10,000 mg/l, (activated sludge)

Ecotoxicological reports on a comparable product

Additional Ecotoxicological Remarks

Resin

Ecological Data for Acetone**Biodegradation**

Anaerobic, 100 %, Exposure time: 4 Days

Readily biodegradable.

Biochemical Oxygen Demand (BOD)

5 Days, 0.81 g/g
20 Days, 1.78 mg/l

Chemical Oxygen Demand (COD)

1,920 mg/g

Acute and Prolonged Toxicity to Fish

LC50: 8,300 mg/l (Bluegill (*Lepomis macrochirus*), 96 h)
LC50: 5,000 mg/l (Goldfish (*Carassius auratus*), 24 h)

Acute Toxicity to Aquatic Invertebrates

EC50: > 10,000 mg/l (Water flea (*Daphnia magna*), 24 h)

Toxicity to Aquatic Plants

EC50: 4,424 mg/l, End Point: growth (Blue-green algae (*Anabaena flosaquae*), 14 Days)
NOEC: 4,740 mg/l, End Point: growth (Green algae (*Selenastrum capricornutum*), 48 h)

Toxicity to Microorganisms

IC50: 1,200 mg/l, (Other bacteria, 24 h)

13. Disposal considerations

Waste Disposal Method

Waste disposal should be in accordance with existing federal, state and local environmental control laws.

Empty Container Precautions

Recondition or dispose of empty container in accordance with governmental regulations.

14. Transport information

Land transport (DOT)

Non-Regulated

Sea transport (IMDG)

Non-Regulated

Air transport (ICAO/IATA)

Non-Regulated

15. Regulatory information

United States Federal Regulations

OSHA Hazcom Standard Rating: Hazardous

US. Toxic Substances Control Act: Listed on the TSCA Inventory.

US. EPA CERCLA Hazardous Substances (40 CFR 302):

Components

None

SARA Section 311/312 Hazard Categories:

Acute Health Hazard

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):

Components

None

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:

Components

None

US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261)

Under RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

State Right-To-Know Information

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
>=1%	Water	7732-18-5
>=1%	Aliphatic Polyurethane Resin	CAS# is a trade secret

New Jersey Environmental Hazardous Substances List and/or New Jersey RTK Special Hazardous Substances Lists:

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
0.1 - 1%	Acetone	67-64-1

California Prop. 65:

To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

16. Other information

NFPA 704M Rating

Health	1
Flammability	1
Reactivity	0
Other	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

HMIS Rating

Health	1
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Flammability	1
Physical Hazard	0

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

* = Chronic Health Hazard

The method of hazard communication for Bayer MaterialScience LLC is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by Bayer MaterialScience LLC as a customer service.

Contact person: Product Safety Department
Telephone: (412) 777-2835
MSDS Number: 112000019899
Version Date: 01/25/2012
Report version: 1.13

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