

# MATERIAL SAFETY DATA SHEET



Bayer MaterialScience

**Bayer MaterialScience LLC**  
Product Safety & Regulatory Affairs  
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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:** BAYSEAL 2.7 S  
**Material Number:** 81137448  
**Chemical Family:** Polyol System

## 2. Hazards Identification

### Emergency Overview

**Warning Color:** Amber, Brown **Form:** liquid **Odor:** slight, Ether, Amine.  
May cause eye, skin, and respiratory tract irritation. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Vapor reduces oxygen available for breathing. May cause allergic respiratory reaction. May cause allergic skin reaction. May cause a temporary fogging of the eyes. May affect nervous system. May cause irregular heartbeat. May cause liver damage. May cause kidney damage.

### Potential Health Effects

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

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

## HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

### Inhalation

#### **Acute Inhalation**

#### **For Component: Hydrofluorocarbon**

Overexposure to vapor may produce dizziness, drowsiness, or nausea. May induce cardiac arrhythmia (irregular heartbeat) in some individuals. Vapor can reduce oxygen available for breathing. May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.

#### **For Component: Chlorinated Phosphate Ester**

May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.

**For Component: Tertiary Amine**

Causes respiratory tract irritation with symptoms of coughing, sore throat and runny nose. May cause allergic respiratory reaction with symptoms of coughing, wheezing, shortness of breath, bronchospasm, and reduced lung function.

**For Component: Tertiary Amine**

May cause pulmonary edema with symptoms of breathing difficulty and tightness of chest.

**For Component: Tertiary Amine**

Corrosive with symptoms of coughing, burning, ulceration, and pain.

**Chronic Inhalation**

**For Component: Tertiary Amine**

May cause pulmonary edema with symptoms of breathing difficulty and tightness of chest.

**Skin**

**Acute Skin**

**For Component: Polymer**

Causes irritation with symptoms of reddening, itching, and swelling.

**For Component: Hydrofluorocarbon**

Slightly toxic by skin absorption. May cause slight irritation.

**For Component: Chlorinated Phosphate Ester**

May cause slight irritation.

**For Component: Tertiary Amine**

May cause allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage. Moderately toxic by skin absorption.

**For Component: Tertiary Amine**

Toxic by skin absorption.

**For Component: Tertiary Amine**

Toxic by skin absorption. Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage.

**Chronic Skin**

**For Component: Tertiary Amine**

Repeated and prolonged contact may cause an allergic skin reaction in sensitive individuals.

**Eye**

**Acute Eye**

**For Component: Polymer**

Causes irritation with symptoms of reddening, tearing, stinging, and swelling.

**For Component: Hydrofluorocarbon**

May cause slight irritation.

**For Component: Chlorinated Phosphate Ester**

Not expected to be irritating.

**For Component: Tertiary Amine**

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: Tertiary Amine**

Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage.

**For Component: Tertiary Amine**

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.

**Chronic Eye**

**For Component: Tertiary Amine**

Prolonged vapor contact may cause conjunctivitis.

**Ingestion**

**Acute Ingestion**

**For Component: Chlorinated Phosphate Ester**

May be harmful if swallowed. Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea. Moderately toxic by ingestion.

**For Component: Tertiary Amine**

May be harmful if swallowed. May cause digestive tract burns.

**For Component: Tertiary Amine**

Corrosive to the digestive tract with symptoms of burning and ulceration.

**For Component: Tertiary Amine**

Moderately toxic by ingestion. Corrosive to the digestive tract with symptoms of burning and ulceration.

**Chronic Ingestion**

**For Component: Chlorinated Phosphate Ester**

May cause liver damage. May cause kidney damage.

**Carcinogenicity:**

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

**3. Composition/Information on Ingredients**

**Hazardous components**

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
35 - 45%	Polymer	CAS# is a trade secret
5 - 10%	Hydrofluorocarbon	460-73-1
3 - 7%	Chlorinated Phosphate Ester	CAS# is a trade secret
0.1 - 1%	Tertiary Amine	CAS# is a trade secret
0.1 - 1%	Tertiary Amine	CAS# is a trade secret
0.1 - 1%	Tertiary Amine	CAS# is a trade secret

**4. First aid measures**

**Eye contact**

In case of contact, flush eyes with plenty of lukewarm water. 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 using a pocket mask type resuscitator. Get medical attention.

**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 (CO<sub>2</sub>), 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.

**6. Accidental release measures****Spill and Leak Procedures**

Cover spill with inert material (e. g., dry sand or earth) and collect for proper disposal. Use appropriate personal protective equipment during clean up. Evacuate and keep unnecessary people out of spill area.

**7. Handling and storage****Storage temperature:**

**minimum:** 21.11 °C (70 °F)

**maximum:** 26.67 °C (80 °F)

**Storage period**

6 Months

**Handling/Storage Precautions**

Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling. Keep container closed when not in use. Material is hygroscopic and may absorb small amounts of atmospheric moisture. If contamination with isocyanates is suspected, do not reseal containers. Avoid contact with eyes. Avoid contact with skin or clothing. Do not breathe vapours/dust.

**Further Info on Storage Conditions**

Store materials between 70°F to 80°F (21°C to 27°C) in a dry and well ventilated area for a minimum of 48 hours prior to application of material. The transit temperature range is 32°F to 100°F (0°C to 38°C). The pressure in sealed containers can increase under the influence of heat. Protect against heat and direct sunlight.

## 8. Exposure controls/personal protection

Country specific exposure limits have not been established or are not applicable

### Industrial Hygiene/Ventilation Measures

When handling this product, ventilation of the work area is recommended.

### Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment., In spray applications, an organic vapor/particulate respirator or air supplied unit is necessary.

### Hand protection

When this product is sprayed in combination with polymeric MDI ("A" side), fabric gloves coated in nitrile, neoprene, butyl or PVC are recommended. When handling liquid product, nitrile, neoprene, butyl or PVC gloves are recommended.

### Eye protection

Chemical safety goggles or safety glasses with side-shields.

### Skin and body protection

Wear as appropriate:, disposable one-piece overall with integral hood, Impervious protective clothing.

### 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.

## 9. Physical and chemical properties

<b>Form:</b>	liquid
<b>Color:</b>	Amber, Brown
<b>Odor:</b>	slight, Ether, Amine
<b>Vapour pressure:</b>	1,227 hPa
<b>Specific Gravity:</b>	1.14
<b>Solubility in Water:</b>	Partially soluble
<b>Bulk density:</b>	Approximately 1,138 kg/m <sup>3</sup>

## 10. Stability and reactivity

### Hazardous Reactions

Hazardous polymerisation does not occur.

### Stability

Stable

### Materials to avoid

Oxidizing agents, Isocyanates

### Hazardous decomposition products

By Fire: Carbon Dioxide; Carbon Monoxide; Hydrogen cyanide, Nitrogen oxides (NO<sub>x</sub>), Amines, Hydrogen chloride gas, Hydrogen fluoride, Carbonyl halides, Oxides of phosphorus, Other hazardous decomposition products may be formed.

## 11. Toxicological information

### Toxicity Data for Polymer

#### **Toxicity Note**

Toxicity data is based on a similar product.

#### **Acute oral toxicity**

LD50: 1,370 mg/kg (rat)

#### **Acute dermal toxicity**

LD50: 12800 (rabbit)

### Toxicity Data for Hydrofluorocarbon

#### **Acute inhalation toxicity**

LC50: > 200000 ppm, 4 h (Rat)

#### **Acute dermal toxicity**

LD50: > 2,000 mg/kg (rat)

#### **Skin irritation**

rabbit, Non-irritating

#### **Eye irritation**

rabbit, Mild eye irritation

#### **Sensitisation**

non-sensitizer

#### **Repeated dose toxicity**

28 d, inhalation: NOAEL: 50,000 ppm, (Rat)

90 d, Inhalation: NOAEL: 2000 ppm, (Rat)

#### **Mutagenicity**

Genetic Toxicity in Vitro:

Cytogenetic assay: ambiguous (human lymphocytes, Metabolic Activation: with/without)

Ames: negative (Metabolic Activation: with/without)

Genetic Toxicity in Vivo:

Micronucleus Assay: negative (mouse)

negative

#### **Developmental Toxicity/Teratogenicity**

No Teratogenic effects observed at doses tested.

### Toxicity Data for Chlorinated Phosphate Ester

#### **Acute oral toxicity**

LD50: 632 mg/kg (rat)

#### **Acute inhalation toxicity**

LC50: > 17,800 mg/l, 1 h (rat, Male/Female)

aerosol

#### **Acute dermal toxicity**

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

#### **Skin irritation**

Human, Patch Test, No skin irritation  
rabbit, No skin irritation

**Eye irritation**

rabbit, Draize, Exposure Time: 24 h, slight irritant

**Sensitisation**

dermal: non-sensitizer (guinea pig, Maximization Test)  
dermal: non-sensitizer (Human, Patch Test)

**Repeated dose toxicity**

90 Days, oral: NOAEL: 36 mg/kg, (Rat, male)

**Mutagenicity**

Genetic Toxicity in Vitro:

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

Positive and negative results were reported.

Mammalian cell - gene mutation assay: positive (Mouse lymphoma cells (L5178Y/TK), Metabolic Activation: with)

Positive and negative results were reported.

**Toxicity to Reproduction/Fertility**

Other method, inhalation, daily, (rat, male)

Reproductive effects have been observed in animal studies.

**Developmental Toxicity/Teratogenicity**

rat, female, oral, gestation, daily, NOAEL (teratogenicity): > 1%, NOAEL (maternal): > 1%

No Teratogenic effects observed at doses tested., No fetotoxicity observed at doses tested.

**Toxicity Data for Tertiary Amine**

**Acute oral toxicity**

LD50: 2,000 mg/kg (Rat)

**Acute inhalation toxicity**

LC50: 6.1 mg/l, (Rat)

**Acute dermal toxicity**

LD50: 1,220 - 3,135 mg/kg (rabbit)

**Skin irritation**

rabbit, Draize, Mild skin irritation

rabbit, OECD Guideline for Testing of Chemicals, No. 404, Exposure Time: 1 h, Corrosive

**Eye irritation**

rabbit, Draize, Corrosive

**Sensitisation**

dermal: sensitizer (mouse, Mouse local lymphoma assay)

**Repeated dose toxicity**

90 Days, inhalation: NOAEL: 24 ppm, (Rat, Male/Female, 6 hrs/day 5 days/week)

Irritation to lungs and nasal cavity. Reduced body weight gain.

**Carcinogenicity**

mouse, females, oral, 123 weeks,

negative

**Toxicity to Reproduction/Fertility**

inhalation, daily, (Rat, Female) NOAEL (parental): 10 ppm, NOAEL (F2): 100 ppm

No effects on Reproductive parameters observed at doses tested.

**Developmental Toxicity/Teratogenicity**

rat, female, inhalation, gestation, NOAEL (teratogenicity): 100 ppm, NOAEL (maternal): 10 ppm

No Teratogenic effects observed at doses tested., No fetotoxicity observed at doses tested.

**Toxicity Data for Tertiary Amine**

**Acute oral toxicity**

LD50: 3,250 uL/kg (Rat)

LD50: 2,800 mg/kg (Rat)

**Acute dermal toxicity**

LD50: > 1,000 mg/kg (rabbit)

**Skin irritation**

rabbit, Corrosive

**Toxicity Data for Tertiary Amine**

**Acute oral toxicity**

LD50: 1,045 mg/kg (Rat)

**Acute inhalation toxicity**

LC50: 2.09 mg/l, 6 h (Rat)

**Acute dermal toxicity**

LD50: 230 mg/kg (rabbit)

**Skin irritation**

Corrosive

**Eye irritation**

Corrosive

**12. Ecological information**

**Ecological Data for Hydrofluorocarbon**

**Acute and Prolonged Toxicity to Fish**

LC50: > 81.8 mg/l (Rainbow trout (Salmo gairdneri), 48 h)

**Acute Toxicity to Aquatic Invertebrates**

EC50: > 97.9 mg/l (Water flea (Daphnia magna), 96 h)

**Ecological Data for Chlorinated Phosphate Ester**

**Biodegradation**

Aerobic, 0 %, Exposure time: 28 Days, Not readily biodegradable.

**Bioaccumulation**

Cyprinus carpio (Carp), Exposure time: 42 Days, ca. 0.8 - 2.8 BCF



**Acute and Prolonged Toxicity to Fish**

LC50: ca. 84 mg/l (Bluegill (*Lepomis macrochirus*), 96 h)  
LC50: 51 mg/l (Fathead minnow (*Pimephales promelas*), 96 h)  
LC50: 30 mg/l (Guppy (*Poecilia reticulata*), 96 h)

**Acute Toxicity to Aquatic Invertebrates**

EC50: ca. 131 mg/l (Water flea (*Daphnia magna*), 48 h)

**Toxicity to Aquatic Plants**

EC50: 45 mg/l, End Point: biomass (Green algae (*Scenedesmus subspicatus*), 72 h)  
EC50: 41 - 55 mg/l, End Point: biomass (Green algae (*Selenastrum capricornutum*), 96 h)

**Toxicity to Microorganisms**

EC50: 295 mg/l, (*Photobacterium phosphoreum*, 30 min)  
EC50: 784 mg/l, (Activated sludge microorganisms, 3 h)

**Ecological Data for Tertiary Amine****Biodegradation**

aerobic, > 90 %, Exposure time: 13 Days, i.e. readily biodegradable

**Biochemical Oxygen Demand (BOD)**

285 O<sub>2</sub>/g

**Chemical Oxygen Demand (COD)**

485 O<sub>2</sub>/g

**Acute and Prolonged Toxicity to Fish**

LC50: 81 mg/l (Fathead minnow (*Pimephales promelas*), 96 h)  
LC50: 100 - 220 mg/l (Golden orfe (*Leuciscus idus*), 96 h)

**Acute Toxicity to Aquatic Invertebrates**

EC50: 98 mg/l (Water flea (*Daphnia magna*), 48 h)

**Toxicity to Aquatic Plants**

EC50: 35 mg/l, (Green algae (*Scenedesmus subspicatus*), 72 h)

**Toxicity to Microorganisms**

EC50: > 8,000 mg/l, (*Pseudomonas putida*, 71 h)

**Ecological Data for Tertiary Amine****Additional Ecotoxicological Remarks**

No data available for this component.

**Ecological Data for Tertiary Amine****Biodegradation**

Not readily biodegradable.

**Acute and Prolonged Toxicity to Fish**

LC50: 220 mg/l (Golden orfe (*Leuciscus idus*), 96 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)

**Proper shipping name:** Aviation regulated liquid, n.o.s. (contains Hydrofluorocarbon)  
**Hazard Class or Division:** 9  
**UN number:** UN3334  
**Packaging group:** III  
**Hazard Label(s):** MISCELLANEOUS

## 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, Chronic 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>
35 - 45%	Polymer	CAS# is a trade secret
>=1%	Polyester Polyol	CAS# is a trade secret
>=1%	Polyether Polyol	CAS# is a trade secret
5 - 10%	Hydrofluorocarbon	460-73-1
3 - 7%	Chlorinated Phosphate Ester	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%	Ethylene Glycol	107-21-1

**Pennsylvania Right to Know Special Hazard Substance List:**

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
<0.1%	1,4-Dioxane	123-91-1

**MA Right to Know Extraordinarily Hazardous Substance List:**

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
<0.1%	1,4-Dioxane	123-91-1

**California Prop. 65:**

**Warning! This product contains chemical(s) known to the State of California to be Carcinogenic.**

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
<0.1%	1,4-Dioxane	123-91-1
1 - 5 ppb	Formaldehyde	50-00-0

**16. Other information**

**NFPA 704M Rating**

<b>Health</b>	2
<b>Flammability</b>	1
<b>Reactivity</b>	0
<b>Other</b>	

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

**HMIS Rating**

<b>Health</b>	2*
<b>Flammability</b>	1
<b>Physical Hazard</b>	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: 112000031327  
Version Date: 01/08/2014  
Report version: 3.6

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|| Changes since the last version are highlighted in the margin. This version replaces all previous versions.