SAFETY DATA SHEET

1. Identification

Covestro LLC
formerly Bayer MaterialScience LLC
1 Covestro Circle
Pittsburgh, PA 15205
USA

TRANSPORTATION EMERGENCY

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

NON-TRANSPORTATION

Emergency Phone:	Call Chemtrec
Information Phone:	(844) 646-0545

Product Name:	BAYSYSTEMS 684
Material Number:	6664466
Chemical Family:	Polyol System
Use:	Polyol components for the production of polyurethanes

2. Hazards Identification

GHS Classification

Skin irritation:	Category 2
Serious eye damage:	Category 1
HNOC - Halo vision:	

GHS Label Elements

Hazard pictograms:

Signal word: Danger

Hazard statements:
Causes skin irritation.
Causes serious eye damage.
Vapors can cause temporary corneal edema with symptoms of blurred vision or the appearance of halos around bright objects.

Precautionary statements:

Prevention:
Wash skin and face thoroughly after handling.
Wear eye and face protection.
Wear protective gloves.

Response:
IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a doctor or emergency medical facility (i.e., 911).
If skin irritation occurs: Get medical attention.
Take off contaminated clothing and wash before reuse.

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity:
1 %

3. Composition/Information on Ingredients

Hazardous Components

Weight Percent	Components	CAS-No.	Classification
1 - 5%	Pentamethyldiethylenetriamine (PMDETA)	3030-47-5	Acute toxicity Category 4 Oral. Acute toxicity Category 3 Inhalation. Acute toxicity Category 3 Dermal. Skin corrosion Category 1A. Serious eye damage Category 1. HNOC - Halo vision. Flammable liquids Category 3.
1 - 5%	N,N-dimethylcyclohexylamine	98-94-2	Acute toxicity Category 3 Oral. Acute toxicity Category 3 Inhalation. Acute toxicity Category 3 Dermal. Skin corrosion Category 1C. Serious eye damage Category 1. Specific target organ toxicity - single exposure Category 3 Respiratory system. HNOC - Halo vision. Flammable liquids Category 3.
0.1 - 1%	Tertiary Amine	CAS# is a trade secret	Acute toxicity Category 4 Oral. Skin irritation Category 2. Serious eye damage Category 1. Specific target organ toxicity - single exposure Category 3 Respiratory system. HNOC - Halo vision. Flammable liquids Category 4.

4. First Aid Measures

Most Important Symptom(s)/Effect(s)

Acute: Causes skin irritation with symptoms of reddening, itching, and swelling., Causes serious eye damage with symptoms of eye burns, corneal injury, and possible blindness., Vapors can cause temporary corneal edema with symptoms of blurred vision or the appearance of halos around bright objects.

Eye Contact

In case of contact, flush eyes with plenty of water for at least 15 minutes. Call a physician immediately.

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

Inhalation
If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. 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 (CO2), Dry chemical, Foam, water spray for large fires.

Unsuitable Extinguishing Media No Data Available

Fire Fighting Procedure
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.

Hazardous Decomposition Products
By Fire: Carbon DioxideCarbon Monoxide other aliphatic fragments which have not been determined

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

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. Do not get on skin or clothing. Do not get in eyes. Do not breathe vapours or spray mist.

Storage Period:
12 Months

Storage Temperature
Maximum: 50 °C (122 °F)

Substances to Avoid
Oxidizing agents, Isocyanates

8. Exposure Controls/Personal Protection

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

Any component which is listed in section 3 and is not listed in this section does not have a known ACGIH TLV, OSHA PEL or supplier recommended occupational exposure limit.

Industrial Hygiene/Ventilation Measures
Use local and general exhaust ventilation to control levels of exposure.

Respiratory Protection
In case of insufficient ventilation, wear suitable respiratory equipment.

Hand Protection
Permeation resistant gloves.

Eye Protection
Chemical resistant goggles must be worn., Chemical safety goggles in combination with a full face shield if a splash hazard exists.

Skin Protection
Permeation resistant 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

State of Matter:	liquid
Color:	Colorless to light yellow
Odor:	Mild
Odor Threshold:	No Data Available
pH:	ca. 10
Freezing Point:	No Data Available
Boiling Point:	No Data Available
Flash Point:	> 200 °C (392 °F)
Evaporation Rate:	No Data Available
Lower Explosion Limit:	No Data Available
Upper Explosion Limit:	No Data Available
Vapor Pressure:	No Data Available
Vapor Density:	No Data Available
Density:	1.03 g/cm³
Relative Vapor Density:	No Data Available
Specific Gravity:	No Data Available
Solubility in Water:	Partially soluble
Partition Coefficient: n-octanol/water:	No Data Available
Auto-ignition Temperature:	No Data Available
Decomposition Temperature:	No Data Available
Dynamic Viscosity:	No Data Available
Kinematic Viscosity:	No Data Available

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; other aliphatic fragments which have not been determined

11. Toxicological Information

Likely Routes of Exposure: Skin Contact
Eye Contact

Health Effects and Symptoms

Acute: Causes skin irritation with symptoms of reddening, itching, and swelling., Causes serious eye damage with symptoms of eye burns, corneal injury, and possible blindness., Vapors can cause temporary corneal edema with symptoms of blurred vision or the appearance of halos around bright objects.
Chronic: Not expected to cause adverse chronic health effects.

Toxicity Data for: BAYSYSTEMS 684

Acute Oral Toxicity
Acute toxicity estimate: > 5000 mg/kg (Calculation method)

Acute Inhalation Toxicity
Acute toxicity estimate: > 40 mg/l, 4 h, vapour (Calculation method)

Acute Dermal Toxicity
Acute toxicity estimate: > 5000 mg/kg (Calculation method)

Toxicity Data for Pentamethyldiethylenetriamine (PMDETA)
Acute Oral Toxicity
LD50: 1630 mg/kg (rat)

Acute Inhalation Toxicity
LC50: 3.08 mg/l, 290 ppm, 4 h, vapour(rat)
4 hour test is calculated.

LC50: 290 ppm, 6 h, vapour(rat)

Acute Dermal Toxicity
LD50: 234.92 mg/kg (rabbit)

Skin Irritation
Severely irritating

Eye Irritation
severe irritant

Other Relevant Toxicity Information

May cause irritation of respiratory tract.

Toxicity Data for N,N-dimethylcyclohexylamine
Acute Oral Toxicity
LD50: 289 mg/kg (rat, male)

LD50: 272 mg/kg (rat, female)

Acute Inhalation Toxicity
LC50: 3.825 mg/l, 4 h, vapour(rat) (OECD Test Guideline 403)
4 hour test is calculated.

Acute Dermal Toxicity
LD50: 380 mg/kg (rat, male) (OECD Test Guideline 402)

Skin Irritation
rabbit, Corrosive

Eye Irritation
rabbit, OECD Test Guideline 405, Severely irritating

Sensitization
dermal: non-sensitizer (Guinea pig)

Skin sensitization (local lymph node assay (LLNA)):: negative (Mouse, OECD Test Guideline 429)

Repeated Dose Toxicity
Oral: NOAEL: 85 mg/kg, (rat, male/female, ad libitum)

9 days, Inhalation: NOAEL: 0.104 mg/l, LOAEL: 0.026 mg/l, (rat, male/female, 6 hours a day, 5 days a week)

Mutagenicity
Genetic Toxicity in Vitro:
Chromosome aberration test in vitro: negative (Chinese hamster ovary (CHO) cells, Metabolic Activation: with/without)
Unscheduled DNA synthesis: negative (rat hepatocytes)

Genetic Toxicity in Vivo:
In vivo micronucleus test: negative (rat, male and female)
negative

Toxicity to Reproduction/Fertility
Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test, Oral, (rat, male/female) NOAEL (parental): 85 mg/kg, Available data show no indications for reproductive toxicity.

Other Relevant Toxicity Information
May cause irritation of respiratory tract.

Toxicity Data for Tertiary Amine
Acute Oral Toxicity
LD50: 700 mg/kg (rat)

Acute Inhalation Toxicity
LC50: > 5 mg/l, 4 h, dust/mist(rat)

4 hour test is calculated.

LC50: > 20 mg/l, 1 h, dust/mist(rat)

Acute Dermal Toxicity
LD50: > 2000 mg/kg (rat)

Skin Irritation
Moderately irritating

Eye Irritation
rabbit, Severely irritating

Repeated Dose Toxicity
28 d, Oral: NOAEL: 100 mg/kg, (rat)

28 d, Inhalation: NOAEL: 0.0058 mg/l, (rat,)

Mutagenicity

Genetic Toxicity in Vivo:
Micronucleus Assay: negative (rat)
negative

Toxicity to Reproduction/Fertility
Oral, (rat, male/female) NOAEL (parental): 100 mg/kg,

Other Relevant Toxicity Information
May cause irritation of respiratory tract.

Carcinogenicity:

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

12. Ecological Information

Ecological Data for: BAYSYSTEMS 684

No data available for this product.

Ecological Data for Pentamethyldiethylenetriamine (PMDETA)
Biodegradation
Not readily biodegradable.

Acute and Prolonged Toxicity to Fish
LC50: 220 mg/l (Golden orfe (Leuciscus idus), 96 h)

Ecological Data for N,N-dimethylcyclohexylamine
Biodegradation
Aerobic, > 70 %, Exposure time: 28 Days

Acute and Prolonged Toxicity to Fish
LC50: > 22 mg/l (Golden orfe (Leuciscus idus), 96 h)

Acute Toxicity to Aquatic Invertebrates
EC50: 75 mg/l (Water flea (Daphnia magna), 48 h)

Toxicity to Aquatic Plants
EC50: 0.31 mg/l, (Green algae (Scenedesmus subspicatus), 72 h)

Toxicity to Microorganisms
EC50: 206 mg/l, (Pseudomonas putida, 17 h)

Ecological Data for Tertiary Amine
Biodegradation
7 %, Exposure time: 28 Days

Acute and Prolonged Toxicity to Fish
LC50: 1,730 mg/l (Fathead minnow (Pimephales promelas), 96 h)

Acute Toxicity to Aquatic Invertebrates
EC50: 92 mg/l (Water flea (Daphnia magna), 48 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. Transportation Information

Land transport (DOT)
Non-Regulated

Sea transport (IMDG)
Non-Regulated

Air transport (ICAO/IATA)
Non-Regulated

15. Regulatory Information

United States Federal Regulations
US. Toxic Substances Control Act: Listed on the TSCA Inventory.

No substances are subject to TSCA 12(b) export notification requirements.

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 SDS 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:

Weight percent	Components	CAS-No.
>=1%	Polyether Polyol	**CAS# is a trade secret**
>=1%	Polyether Polyol	9049-71-2
>=1%	Plasticizer	**CAS# is a trade secret**
>=1%	Polyether Polyol	25322-69-4
>=1%	Water	7732-18-5
1 - 5%	N,N-dimethylcyclohexylamine	98-94-2

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

Weight percent	Components	CAS-No.
1 - 5%	N,N-dimethylcyclohexylamine	98-94-2

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.

Based on information provided by our suppliers, this product is considered "DRC Conflict Free" as defined by the SEC Conflict Minerals Final Rule (Release No. 34-67716; File No. S7-40-10; Date: 2012-08-22).

16. Other Information

The method of hazard communication for Covestro LLC is comprised of Product Labels and Safety Data Sheets.

Contact:	Product Safety Department
Telephone:	(412) 413-2835
SDS Number:	112000028957
Version Date:	08/28/2015
SDS Version:	2.0

This information is furnished without warranty, express or implied. This information is believed to be accurate to the best knowledge of Covestro LLC. The information in this SDS relates only to the specific material designated herein. Covestro LLC assumes no legal responsibility for use of or reliance upon the information in this SDS.

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