



SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

Product name: BETASEAL™ X2500 B Plus

Issue Date: 07/15/2016
Print Date: 07/16/2016

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: BETASEAL™ X2500 B Plus

Recommended use of the chemical and restrictions on use

Identified uses: An adhesive -- For use in automotive applications.

COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY
2030 WILLARD H DOW CENTER
MIDLAND MI 48674-0000
UNITED STATES

Customer Information Number:

800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: CHEMTREC +1 800-424-9300

Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Glycerol, propylene oxide, ethylene oxide polymer	9082-00-2	> 35.0 - < 45.0 %

Styrene-acrylonitrile polymer	57913-80-1	> 25.0 - < 35.0 %
2-Propenenitrile, polymer with ethenylbenzene	9003-54-7	> 20.0 - < 30.0 %
Ceramic materials and wares, chemicals	66402-68-4	> 10.0 - < 20.0 %
Carbon black	1333-86-4	> 5.0 - < 15.0 %
1,2-Benzenedicarboxylic acid, di-C8-10-alkyl esters	71662-46-9	< 10.0 %
Diisononyl phthalate	28553-12-0	< 10.0 %

4. FIRST AID MEASURES

Description of first aid measures

General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Wash off with plenty of water.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. Suitable emergency eye wash facility should be available in work area.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function. Water fog, applied gently may be used as a blanket for fire extinguishment.

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

Special hazards arising from the substance or mixture

Hazardous 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: Nitrogen oxides. Carbon monoxide. Carbon dioxide. Combustion products may include trace amounts of: Styrene. Hydrogen cyanide. Acrylonitrile.

Unusual Fire and Explosion Hazards: Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Do not use direct water stream. May spread fire. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting 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

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Absorb with materials such as: Cat litter. Sand. Sawdust. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Avoid moisture.

Storage stability

Storage temperature:

> 5 - < 25 °C (> 41 - < 77
°F)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Although some of the components of this product may have exposure guidelines, no exposure would be expected under normal handling conditions due to the physical state of the material.

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, if handling at elevated temperatures without sufficient ventilation, use an approved air-purifying respirator.

The following should be effective types of air-purifying respirators: Organic vapor cartridge.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Paste
Color	Black
Odor	Characteristic
Odor Threshold	No test data available
pH	No test data available
Melting point/range	No test data available
Freezing point	No test data available

Boiling point (760 mmHg)	No test data available
Flash point	closed cup >230 °F (230 °F) <i>ASTM D3278</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	The product is not flammable.
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	No test data available
Relative Vapor Density (air = 1)	No test data available
Relative Density (water = 1)	1.21 <i>Calculated.</i>
Water solubility	not soluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Dynamic Viscosity	No test data available
Kinematic Viscosity	No test data available
Explosive properties	No test data available
Oxidizing properties	No test data available
Molecular weight	No data available
Volatile Organic Compounds	0.01 lb/gln <i>EPA Method No. 24</i> (typical value)

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose. Avoid direct sunlight.

Incompatible materials: Avoid contact with oxidizing materials. Avoid contact with: None known.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Processing may release fumes and other decomposition products. At temperatures exceeding melt temperatures, polymer fragments can be released. Fumes can be irritating. Decomposition products can include and are not limited to: Aromatic compounds. Acrylonitrile. Combustible gases.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. May cause nausea and vomiting. May cause abdominal discomfort or diarrhea. Single dose oral LD50 has not been determined.

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts. The dermal LD50 has not been determined.

Acute inhalation toxicity

At room temperature, exposure to vapor is minimal due to low volatility; vapor from heated material may cause respiratory irritation. This material contains mineral and/or inorganic fillers. There is essentially no potential for inhalation exposure to these fillers incidental to industrial handling due to the physical state.

As product: The LC50 has not been determined.

Skin corrosion/irritation

Prolonged contact may cause skin irritation with local redness. Material may stick to skin causing irritation upon removal.

Serious eye damage/eye irritation

May cause eye irritation.

Sensitization

For skin sensitization:

For the component(s) tested:

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Contains component(s) which have been reported to cause effects on the following organs in animals:

Kidney.

Liver.

Carcinogenicity

For the phthalate ester(s): Kidney effects and/or tumors have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans. Liver effects and/or tumors have been observed in rats. These effects are believed to be species specific and unlikely to occur in humans.

Teratogenicity

Contains component(s) which did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother.

Reproductive toxicity

For the phthalate ester(s): In laboratory animals, excessive doses toxic to the parent animals caused decreased weight and survival of offspring. There were no effects on fertility at any dose.

Mutagenicity

Contains a component(s) which were negative in in vitro genetic toxicity studies. Contains component(s) which were negative in animal genetic toxicity studies.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

COMPONENTS INFLUENCING TOXICOLOGY:

Glycerol, propylene oxide, ethylene oxide polymer

Acute oral toxicity

Typical for this family of materials. LD50, Rat, > 2,000 mg/kg Estimated. No deaths occurred at this concentration.

Acute dermal toxicity

Typical for this family of materials. LD50, Rabbit, > 2,000 mg/kg Estimated.

Acute inhalation toxicity

The LC50 has not been determined.

Styrene-acrylonitrile polymer

Acute oral toxicity

LD50, Rat, > 2,000 mg/kg No deaths occurred at this concentration.

Acute dermal toxicity

LD50, Rabbit, > 2,000 mg/kg No deaths occurred at this concentration.

Acute inhalation toxicity

The LC50 has not been determined.

2-Propenenitrile, polymer with ethenylbenzene

Acute oral toxicity

LD50, Rat, > 5,000 mg/kg Estimated.

Acute dermal toxicity

For similar material(s): LD50, Rabbit, > 2,000 mg/kg Estimated.

Acute inhalation toxicity

The LC50 has not been determined.

Ceramic materials and wares, chemicals

Acute oral toxicity

LD50, Rat, female, > 2,000 mg/kg OECD Test Guideline 425 No deaths occurred at this concentration.

Acute dermal toxicity

For similar material(s): LD50, Rat, male and female, > 2,500 mg/kg OECD Test Guideline 402 No deaths occurred at this concentration.

Acute inhalation toxicity

The LC50 has not been determined.

Carbon black**Acute oral toxicity**

LD50, Rat, > 8,000 mg/kg

Acute dermal toxicity

LD50, Rabbit, > 3,000 mg/kg No deaths occurred at this concentration.

Acute inhalation toxicity

LC50, Rat, 1 Hour, dust/mist, 27 mg/l No deaths occurred at this concentration.

1,2-Benzenedicarboxylic acid, di-C8-10-alkyl esters**Acute oral toxicity**

LD50, Rat, > 2,000 mg/kg

Acute dermal toxicity

The dermal LD50 has not been determined.

Acute inhalation toxicity

The LC50 has not been determined.

Diisononyl phthalate**Acute oral toxicity**

LD50, Rat, > 10,000 mg/kg

Acute dermal toxicity

LD50, Rabbit, > 3,160 mg/kg No deaths occurred at this concentration.

Acute inhalation toxicity

LC50, Rat, male and female, 4 Hour, dust/mist, > 4.4 mg/l No deaths occurred following exposure to a saturated atmosphere.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity**Glycerol, propylene oxide, ethylene oxide polymer****Acute toxicity to fish**

For this family of materials:

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Styrene-acrylonitrile polymer**Acute toxicity to fish**

For similar material(s):

Material is practically non-toxic to aquatic invertebrates on an acute basis (LC50/EC50 > 100 mg/L).

2-Propenenitrile, polymer with ethenylbenzene

Acute toxicity to fish

No relevant data found.

Ceramic materials and wares, chemicals

Acute toxicity to fish

No relevant data found.

Carbon black

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Leuciscus idus (Golden orfe), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), 24 Hour, > 5,600 mg/l, OECD Test Guideline 202 or Equivalent

1,2-Benzenedicarboxylic acid, di-C8-10-alkyl esters

Acute toxicity to fish

Toxicity to aquatic species occurs at concentrations above material's water solubility.

Diisononyl phthalate

Acute toxicity to fish

Not expected to be acutely toxic to aquatic organisms.

Persistence and degradability

Glycerol, propylene oxide, ethylene oxide polymer

Biodegradability: For this family of materials: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Styrene-acrylonitrile polymer

Biodegradability: The polymeric component is not expected to biodegrade.

2-Propenenitrile, polymer with ethenylbenzene

Biodegradability: No appreciable biodegradation is expected.

Ceramic materials and wares, chemicals

Biodegradability: Biodegradation is not applicable.

Carbon black

Biodegradability: Biodegradation is not applicable.

1,2-Benzenedicarboxylic acid, di-C8-10-alkyl esters

Biodegradability: Material is expected to be readily biodegradable.

10-day Window: Not applicable

Biodegradation: 76 %

Exposure time: 28 d

Method: OECD Test Guideline 303A or Equivalent

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitizer: OH radicals

Atmospheric half-life: 0.7 d

Method: Estimated.

Diisononyl phthalate

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

10-day Window: Not applicable

Biodegradation: 74 %

Exposure time: 28 d

Method: OECD Test Guideline 301C or Equivalent

10-day Window: Not applicable

Biodegradation: > 99 %

Exposure time: 28 d

Method: OECD Test Guideline 302A or Equivalent

10-day Window: Not applicable

Biodegradation: 70.5 %

Exposure time: 28 d

Method: OECD Test Guideline 301F or Equivalent

Theoretical Oxygen Demand: 2.64 mg/mg

Stability in Water (1/2-life)

Hydrolysis, half-life, 3.4 year, pH 7, Half-life Temperature 25 °C, Estimated.

Hydrolysis, half-life, 0.34 year, pH 8, Half-life Temperature 25 °C, Estimated.

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitizer: OH radicals

Atmospheric half-life: 5.487 Hour

Method: Estimated.

Bioaccumulative potential

Glycerol, propylene oxide, ethylene oxide polymer

Bioaccumulation: For this family of materials: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

Styrene-acrylonitrile polymer

Bioaccumulation: No bioconcentration of the polymeric component is expected because of its high molecular weight.

2-Propenenitrile, polymer with ethenylbenzene

Bioaccumulation: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

Ceramic materials and wares, chemicals

Bioaccumulation: Partitioning from water to n-octanol is not applicable.

Carbon black

Bioaccumulation: No relevant data found.

1,2-Benzenedicarboxylic acid, di-C8-10-alkyl esters

Bioaccumulation: Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7).

Partition coefficient: n-octanol/water(log Pow): 9.98 Measured

Diisononyl phthalate

Bioaccumulation: Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7).

Partition coefficient: n-octanol/water(log Pow): 8.8 - 9.7 OECD Test Guideline 117 or Equivalent

Mobility in soil

Glycerol, propylene oxide, ethylene oxide polymer

No data available.

Styrene-acrylonitrile polymer

No data available.

2-Propenenitrile, polymer with ethenylbenzene

No relevant data found.

Ceramic materials and wares, chemicals

No relevant data found.

Carbon black

No relevant data found.

1,2-Benzenedicarboxylic acid, di-C8-10-alkyl esters

No data available.

Diisononyl phthalate

Expected to be relatively immobile in soil (Koc > 5000).

Partition coefficient (Koc): > 5000 Estimated.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

Treatment and disposal methods of used packaging: Empty containers should be recycled or otherwise disposed of by an approved waste management facility. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Do not re-use containers for any purpose.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):**Transport in bulk
according to Annex I or II
of MARPOL 73/78 and the
IBC or IGC Code**

Not regulated for transport

Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

No SARA Hazards

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania Worker and Community Right-To-Know Act:

The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components

Carbon black

CASRN

1333-86-4

1,2-Benzenedicarboxylic acid, di-C8-10-alkyl esters 71662-46-9
Diisononyl phthalate 28553-12-0

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

Components

Diisononyl phthalate
Acrylonitrile

CASRN

28553-12-0
107-13-1

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Hazard Rating System**NFPA**

Health	Fire	Reactivity
1	0	0

Revision

Identification Number: 101209490 / A001 / Issue Date: 07/15/2016 / Version: 10.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY 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 date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

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