



# SAFETY DATA SHEET

BLUE CUBE CHEMICALS SINGAPORE PTE. LTD.

Product name: D.E.R.™ 663U-E EPOXY RESIN

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BLUE CUBE CHEMICALS SINGAPORE PTE. LTD. 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 OF THE HAZARDOUS CHEMICAL AND OF THE SUPPLIER

Product name: D.E.R.™ 663U-E EPOXY RESIN

### Recommended use of the chemical and restrictions on use

Identified uses: Industrial powder coating applications.

### COMPANY IDENTIFICATION

BLUE CUBE CHEMICALS SINGAPORE PTE. LTD.

Westgate Tower, #07-01

1 Gateway Drive

SINGAPORE 608531

SINGAPORE

### Customer Information Number:

+1 844-238-3445

INFO@OLINBC.com

### EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: +65 6542 9595

Local Emergency Contact: +32 3 575 55 55

## 2. HAZARDS IDENTIFICATION

### Classification of the substance or mixture

This product is not hazardous per the Globally Harmonized System of Classification and Labelling (GHS).

### Other hazards

No data available

## 3. COMPOSITION AND INFORMATION OF THE INGREDIENTS OF THE HAZARDOUS CHEMICAL

This product is a substance.

| Component | CASRN | Concentration |
|-----------|-------|---------------|
|-----------|-------|---------------|

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2,2'-[[1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxiran]e] (DGEbPA-b) 25036-25-3 100.0%

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## **4. FIRST AID MEASURES**

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### **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 with plenty of water; remove contact lenses after the first 1-2 minutes then continue flushing for several minutes. Only mechanical effects expected. If effects occur, consult a physician, preferably an ophthalmologist.

**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.

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## **5. FIREFIGHTING MEASURES**

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**Suitable extinguishing media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam.

**Unsuitable extinguishing media:** No data available

### **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: Phenolic compounds. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, do not permit dust to accumulate. Dense smoke is emitted when burned without sufficient oxygen.

### **Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. If material is molten, do not apply direct waterstream. Use fine water spray or foam. Cool surroundings with water to localize fire zone. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

**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). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

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## **6. ACCIDENTAL RELEASE MEASURES**

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**Personal precautions, protective equipment and emergency procedures:** Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Spilled material may cause a slipping hazard.

**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:** Sweep up. Contain spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

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## **7. HANDLING AND STORAGE**

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**Precautions for safe handling:** Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**Conditions for safe storage:** Store in a cool, dry place.

**Storage stability**

|                             |                               |
|-----------------------------|-------------------------------|
| <b>Storage temperature:</b> | <b>Shelf life: Use within</b> |
| < 32 °C                     | 24 Month                      |

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## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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**Control parameters**

Exposure limits are listed below, if they exist.

Exposure limits have not been established for those substances listed in the composition, if any have been disclosed.

**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). If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

**Skin protection**

**Hand protection:** Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

**Other protection:** No precautions other than clean body-covering clothing should be needed.

**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, in dusty atmospheres, use an approved particulate respirator.

The following should be effective types of air-purifying respirators: Particulate filter.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance**

|                                               |                                                                  |
|-----------------------------------------------|------------------------------------------------------------------|
| <b>Physical state</b>                         | Solid.                                                           |
| <b>Color</b>                                  | Yellow                                                           |
| <b>Odor</b>                                   | Odorless                                                         |
| <b>Odor Threshold</b>                         | No test data available                                           |
| <b>pH</b>                                     | Not applicable                                                   |
| <b>Melting point/range</b>                    | Not determined                                                   |
| <b>Freezing point</b>                         | Not applicable to solids                                         |
| <b>Boiling point (760 mmHg)</b>               | Not applicable                                                   |
| <b>Flash point</b>                            | <b>closed cup</b> Not applicable, (decomposes prior to flashing) |
| <b>Evaporation Rate (Butyl Acetate = 1)</b>   | No test data available                                           |
| <b>Flammability (solid, gas)</b>              | Not expected to form explosive dust-air mixtures.                |
| <b>Lower explosion limit</b>                  | Not applicable                                                   |
| <b>Upper explosion limit</b>                  | Not applicable                                                   |
| <b>Vapor Pressure</b>                         | Not applicable                                                   |
| <b>Relative Vapor Density (air = 1)</b>       | Not applicable                                                   |
| <b>Relative Density (water = 1)</b>           | 1.18 <i>Literature</i>                                           |
| <b>Water solubility</b>                       | Insoluble                                                        |
| <b>Partition coefficient: n-octanol/water</b> | No data available                                                |
| <b>Auto-ignition temperature</b>              | Not applicable                                                   |
| <b>Decomposition temperature</b>              | No test data available                                           |

|                             |                                   |
|-----------------------------|-----------------------------------|
| <b>Dynamic Viscosity</b>    | Not applicable                    |
| <b>Kinematic Viscosity</b>  | Not applicable                    |
| <b>Explosive properties</b> | No data available                 |
| <b>Oxidizing properties</b> | No data available                 |
| <b>Softening point</b>      | 98.0 - 104.0 °C <i>ASTM D3104</i> |
| <b>Molecular weight</b>     | Not determined                    |

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

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** No data available

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

**Possibility of hazardous reactions:** Will not occur by itself. Masses of more than one pound (0.5 kg) of product plus an aliphatic amine will cause irreversible polymerization with considerable heat build-up.

**Conditions to avoid:** Exposure to elevated temperatures can cause product to decompose.

**Incompatible materials:** Avoid contact with: Acids. Bases. Avoid unintended contact with amines.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Uncontrolled exothermic reaction of epoxy resins release phenolics, carbon monoxide, and water.

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## 11. TOXICOLOGICAL INFORMATION

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*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.

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

#### Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD50, Rabbit, > 2,000 mg/kg

#### Acute inhalation toxicity

Vapors are unlikely due to physical properties. No adverse effects are anticipated from single exposure to dust.

The LC50 has not been determined.

**Skin corrosion/irritation**

Essentially nonirritating to skin.

**Serious eye damage/eye irritation**

May cause slight temporary eye irritation.

Corneal injury is unlikely.

Solid or dust may cause irritation or corneal injury due to mechanical action.

**Sensitization**

For skin sensitization:

No relevant data found.

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)**

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

**Carcinogenicity**

Similar epoxy resin did not cause cancer in long-term animal studies.

**Teratogenicity**

No relevant data found.

**Reproductive toxicity**

No relevant data found.

**Mutagenicity**

Some similar resins have shown genetic toxicity in in vitro tests, while others have not.

**Aspiration Hazard**

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

**COMPONENTS INFLUENCING TOXICOLOGY:**

**Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane] (DGEBPA-b**

**Acute inhalation toxicity**

The LC50 has not been determined.

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**12. ECOLOGICAL INFORMATION**

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

**Ecotoxicity**

**Acute toxicity to fish**

Not expected to be acutely toxic, but may cause adverse effects by physical/mechanical means.

**Persistence and degradability**

**Biodegradability:** Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

**Bioaccumulative potential**

**Bioaccumulation:** In the terrestrial environment, material is expected to remain in the soil.

**Mobility in Soil**

In the aquatic environment, material will sink and remain in the sediment.

**Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**Other adverse effects**

No data available

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**13. DISPOSAL INFORMATION**

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**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.

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**14. TRANSPORTATION INFORMATION**

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**Classification for ROAD and Rail transport:**

Not regulated for transport

**Classification for SEA transport (IMO-IMDG):**

Not regulated for transport

**Transport in bulk  
according to Annex I or II  
of MARPOL 73/78 and the  
IBC or IGC Code**

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.

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## **15. REGULATORY INFORMATION**

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Occupational Safety and Health Act 1994.  
Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulation 2013.

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## **16. OTHER INFORMATION**

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### **Product Literature**

Additional information on this product may be obtained by calling your sales or customer service contact. Ask for a product brochure. Additional information on this and other products may be obtained by visiting our web page.

### **Hazard Rating System**

#### **NFPA**

| <b>Health</b> | <b>Fire</b> | <b>Reactivity</b> |
|---------------|-------------|-------------------|
| 0             | 0           | 0                 |

### **Revision**

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

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