

### 1. Identification

**Product identifier** FPU 50 Part B  
**Other means of identification** None.  
**Recommended use** 3D printing resin.  
**Recommended restrictions** None known.  
**Manufacturer/Importer/Supplier/Distributor information**  
**Manufacturer/Supplier** Carbon, Inc.  
**Address** 1089 Mills Way  
 Redwood City, CA 94063 USA  
**General information** 1-650-285-6307  
**Email** info@carbon3D.com

**Emergency telephone number** For Hazardous Materials Incidents ONLY (spill, leak, fire, exposure or accident), call CHEMTREC 24/7 at:  
**International** (+)1-703-741-5970  
**USA, Canada, Mexico** (+)1-800-424-9300

### 2. Hazard(s) identification

**Physical hazards** Not classified.

**Health hazards**

|   |   |
|---|---|
| Acute toxicity, oral                              | Category 4  |
| Acute toxicity, dermal                            | Category 3  |
| Acute toxicity, inhalation                        | Category 2  |
| Skin corrosion/irritation                         | Category 1  |
| Serious eye damage/eye irritation                 | Category 1  |
| Specific target organ toxicity, repeated exposure | Category 1 (adrenal gland, blood, heart, kidney, liver) |

**Environmental hazards**

|  |            |
|--|------------|
| Hazardous to the aquatic environment, acute hazard     | Category 2 |
| Hazardous to the aquatic environment, long-term hazard | Category 2 |

**OSHA defined hazards** Not classified.

**Label elements**



**Signal word** Danger

**Hazard statement** Harmful if swallowed. Toxic in contact with skin. Causes severe skin burns and eye damage. Fatal if inhaled. Causes damage to organs (adrenal gland, blood, heart, kidney, liver) through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.

**Precautionary statement**

**Prevention** Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. Wear respiratory protection.

**Response** If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. Collect spillage.

|  |   |
|--|---|
| <b>Storage</b>                                   | Store in a well-ventilated place. Keep container tightly closed. Store locked up.                   |
| <b>Disposal</b>                                  | Dispose of contents/container in accordance with local/regional/national/international regulations. |
| <b>Hazard(s) not otherwise classified (HNOC)</b> | None known.   |
| <b>Supplemental information</b>                  | None.   |

### 3. Composition/information on ingredients

#### Mixtures

| Chemical name                                     | CAS number | %    |
|---|------------|------|
| 2,2'-Dimethyl-4,4'-methylenebis (cyclohexylamine) | 6864-37-5  | 5-95 |
| Poly(oxypropylene)diamine                         | 9046-10-0  | 5-95 |

**Composition comments** All concentrations are in percent by weight unless otherwise indicated.

### 4. First-aid measures

|   |  |
|---|--|
| <b>Inhalation</b>   | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center immediately.  |
| <b>Skin contact</b>   | Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician.  |
| <b>Eye contact</b>  | Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.  |
| <b>Ingestion</b>  | Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.  |
| <b>Most important symptoms/effects, acute and delayed</b>                     | Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Edema. Jaundice. Prolonged exposure may cause chronic effects.   |
| <b>Indication of immediate medical attention and special treatment needed</b> | Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed. |
| <b>General information</b>  | Take off immediately all contaminated clothing. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.                             |

### 5. Fire-fighting measures

|  |  |
|--|--|
| <b>Suitable extinguishing media</b>                                  | Alcohol resistant foam. Powder. Carbon dioxide (CO <sub>2</sub> ).   |
| <b>Unsuitable extinguishing media</b>                                | Do not use water jet as an extinguisher, as this will spread the fire.   |
| <b>Specific hazards arising from the chemical</b>                    | During fire, gases hazardous to health may be formed. Combustion products may include: carbon oxides, nitrogen oxides.                                 |
| <b>Special protective equipment and precautions for firefighters</b> | Self-contained breathing apparatus and full protective clothing must be worn in case of fire.  |
| <b>Fire fighting equipment/instructions</b>                          | Move containers from fire area if you can do so without risk. Dike fire control water for later disposal. Water runoff can cause environmental damage. |
| <b>Specific methods</b>  | Use standard firefighting procedures and consider the hazards of other involved materials.   |
| <b>General fire hazards</b>  | Material will burn in a fire.  |

### 6. Accidental release measures

|  |  |
|--|--|
| <b>Personal precautions, protective equipment and emergency procedures</b> | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. |
|--|--|

**Methods and materials for containment and cleaning up**

Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Collect runoff for disposal as potential hazardous waste.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.

**Environmental precautions**

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

**7. Handling and storage**

**Precautions for safe handling**

Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. When using, do not eat, drink or smoke. Provide adequate ventilation. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**

Store locked up. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Protect from heat and direct sunlight.

**8. Exposure controls/personal protection**

**Occupational exposure limits**

No exposure limits noted for ingredient(s).

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls**

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

When working with liquids wear splash-proof chemical goggles and face shield unless full facepiece respiratory protection is worn.

**Skin protection**

**Hand protection**

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

**Skin protection**

**Other**

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

**Respiratory protection**

Wear suitable respiratory protection. Wear NIOSH approved respirator appropriate for airborne exposure at the point of use. Appropriate respirator selection should be made by a qualified professional. Recommended use: Chemical respirator with organic vapor cartridge and full facepiece.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**

Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**9. Physical and chemical properties**

**Appearance**

**Physical state**

Liquid.

**Form**

Liquid.

**Color**

Not available.

**Odor**

Not available.

**Odor threshold**

Not available.

**pH**

Not available.

**Melting point/freezing point**

Not available.

|   |                 |
|---|-----------------|
| <b>Initial boiling point and boiling range</b>      | Not available.  |
| <b>Flash point</b>                                  | Not available.  |
| <b>Evaporation rate</b>                             | Not available.  |
| <b>Flammability (solid, gas)</b>                    | Not applicable. |
| <b>Upper/lower flammability or explosive limits</b> |                 |
| <b>Flammability limit - lower (%)</b>               | Not available.  |
| <b>Flammability limit - upper (%)</b>               | Not available.  |
| <b>Vapor pressure</b>                               | Not available.  |
| <b>Vapor density</b>                                | Not available.  |
| <b>Relative density</b>                             | Not available.  |
| <b>Solubility(ies)</b>                              |                 |
| <b>Solubility (water)</b>                           | Not available.  |
| <b>Partition coefficient (n-octanol/water)</b>      | Not available.  |
| <b>Auto-ignition temperature</b>                    | Not available.  |
| <b>Decomposition temperature</b>                    | Not available.  |
| <b>Viscosity</b>                                    | Not available.  |
| <b>Other information</b>                            |                 |
| <b>Explosive properties</b>                         | Not explosive.  |
| <b>Oxidizing properties</b>                         | Not oxidizing.  |

## 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| <b>Chemical stability</b>                 | Material is stable under normal conditions.   |
| <b>Possibility of hazardous reactions</b> | No dangerous reaction known under conditions of normal use.                                   |
| <b>Conditions to avoid</b>                | Contact with incompatible materials. Heat and direct sunlight.                                |
| <b>Incompatible materials</b>             | Strong oxidizing agents. Acids.   |
| <b>Hazardous decomposition products</b>   | No hazardous decomposition products are known.  |

## 11. Toxicological information

### Information on likely routes of exposure

|                     |   |
|---------------------|---|
| <b>Inhalation</b>   | Fatal if inhaled. May cause irritation to the respiratory system. |
| <b>Skin contact</b> | Toxic in contact with skin. Causes severe skin burns.             |
| <b>Eye contact</b>  | Causes serious eye damage.  |
| <b>Ingestion</b>    | Causes digestive tract burns. Harmful if swallowed.               |

**Symptoms related to the physical, chemical and toxicological characteristics** Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Edema. Jaundice.

### Information on toxicological effects

**Acute toxicity** Fatal if inhaled. Toxic in contact with skin. Harmful if swallowed.

| <b>Components</b>   | <b>Species</b> | <b>Test Results</b> |
|---|----------------|---------------------|
| 2,2'-Dimethyl-4,4'-methylenebis (cyclohexylamine) (CAS 6864-37-5) |                |                     |
| <b>Acute</b>  |                |                     |
| <b>Dermal</b>   |                |                     |
| LD50  | Rabbit         | 200 - 400 mg/kg     |
| <b>Inhalation</b>   |                |                     |
| <i>Mist</i>   |                |                     |
| LC50  | Rat            | 0.42 mg/l, 4 Hours  |

| Components  | Species  | Test Results           |
|---|--|------------------------|
| <b>Oral</b><br>LD50   | Rat  | 320 - 460 mg/kg        |
| Poly(oxypropylene)diamine (CAS 9046-10-0)                             |  |                        |
| <b>Acute</b><br><b>Dermal</b><br>LD50                                 | Rabbit   | 2979.7 mg/kg, 24 Hours |
| <b>Oral</b><br>LD50   | Rat  | 475 mg/kg              |
| <b>Skin corrosion/irritation</b>                                      | Causes severe skin burns.  |                        |
| <b>Serious eye damage/eye irritation</b>                              | Causes serious eye damage.   |                        |
| <b>Respiratory or skin sensitization</b>                              |  |                        |
| <b>Respiratory sensitization</b>                                      | Not a respiratory sensitizer.  |                        |
| <b>Skin sensitization</b>   | This product is not expected to cause skin sensitization.  |                        |
| <b>Germ cell mutagenicity</b>   | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |                        |
| <b>Carcinogenicity</b>  | Not classifiable as to carcinogenicity to humans.  |                        |
| <b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>         |  |                        |
| Not listed.   |  |                        |
| <b>NTP Report on Carcinogens</b>                                      |  |                        |
| Not listed.   |  |                        |
| <b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)</b> |  |                        |
| Not regulated.  |  |                        |
| <b>Reproductive toxicity</b>  | This product is not expected to cause reproductive or developmental effects.                                     |                        |
| <b>Specific target organ toxicity - single exposure</b>               | Not classified. However: May cause respiratory tract irritation.   |                        |
| <b>Specific target organ toxicity - repeated exposure</b>             | Causes damage to organs (adrenal gland, blood, heart, kidney, liver) through prolonged or repeated exposure.     |                        |
| <b>Aspiration hazard</b>  | Not an aspiration hazard.  |                        |
| <b>Chronic effects</b>  | Prolonged exposure may cause chronic effects.  |                        |

## 12. Ecological information

**Ecotoxicity** Toxic to aquatic life with long lasting effects.

| Components  | Species | Test Results            |                        |
|---|---------|-------------------------|------------------------|
| 2,2'-Dimethyl-4,4'-methylenebis (cyclohexylamine) (CAS 6864-37-5) |         |                         |                        |
| <b>Aquatic</b>  |         |                         |                        |
| <i>Acute</i>  |         |                         |                        |
| Algae   | EC50    | Scenedesmus subspicatus | > 5 mg/l, 72 Hours     |
| Crustacea   | EC50    | Daphnia magna           | 15.2 mg/l, 48 Hours    |
| Fish  | LC50    | Leuciscus idus          | 22 - 46 mg/l, 96 Hours |

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** No data available.

**Mobility in soil** No data available.

**Other adverse effects** None known.

## 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

### DOT

**UN number** UN2927  
**UN proper shipping name** Toxic liquids, corrosive, organic, n.o.s. (2,2'-Dimethyl-4,4'-methylenebis (cyclohexylamine); Poly(oxypropylene)diamine)  
**Transport hazard class(es)**  
**Class** 6.1  
**Subsidiary risk** 8  
**Label(s)** 6.1, 8  
**Packing group** II  
**Environmental hazards**  
**Marine pollutant** Yes  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.  
**Special provisions** IB2, T11, TP2, TP27  
**Packaging exceptions** 153  
**Packaging non bulk** 202  
**Packaging bulk** 243

### IATA

**UN number** UN2927  
**UN proper shipping name** Toxic liquid, corrosive, organic, n.o.s. (2,2'-Dimethyl-4,4'-methylenebis (cyclohexylamine); Poly(oxypropylene)diamine)  
**Transport hazard class(es)**  
**Class** 6.1  
**Subsidiary risk** 8  
**Packing group** II  
**Environmental hazards** Yes  
**ERG Code** 6C  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

### IMDG

**UN number** UN2927  
**UN proper shipping name** TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S. (2,2'-Dimethyl-4,4'-methylenebis (cyclohexylamine); Poly(oxypropylene)diamine)  
**Transport hazard class(es)**  
**Class** 6.1  
**Subsidiary risk** 8  
**Packing group** II  
**Environmental hazards**  
**Marine pollutant** Yes  
**EmS** F-A, S-B  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.  
**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not established.  
**General information** IMDG Regulated Marine Pollutant.

## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**  
Not regulated.  
**CERCLA Hazardous Substance List (40 CFR 302.4)**  
Not listed.  
**SARA 304 Emergency release notification**  
Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not regulated.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)****SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories** Acute toxicity (any route of exposure)  
 Skin corrosion or irritation  
 Serious eye damage or eye irritation  
 Specific target organ toxicity (single or repeated exposure)

**SARA 313 (TRI reporting)**

Not regulated.

**Other federal regulations****Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.**US state regulations****US. Massachusetts RTK - Substance List**

Not regulated.

**US. New Jersey Worker and Community Right-to-Know Act**

Not listed.

**US. Pennsylvania Worker and Community Right-to-Know Law**

Not listed.

**US. Rhode Island RTK**

Not regulated.

**California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**International Inventories**

| Country(s) or region        | Inventory name   | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia                   | Australian Inventory of Chemical Substances (AICS)                     | Yes                    |
| Canada                      | Domestic Substances List (DSL)   | Yes                    |
| Canada                      | Non-Domestic Substances List (NDSL)                                    | No                     |
| China                       | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                    |
| Europe                      | European Inventory of Existing Commercial Chemical Substances (EINECS) | No                     |
| Europe                      | European List of Notified Chemical Substances (ELINCS)                 | No                     |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)               | Yes                    |
| Korea                       | Existing Chemicals List (ECL)  | Yes                    |
| New Zealand                 | New Zealand Inventory  | Yes                    |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | Yes                    |
| Taiwan                      | Taiwan Chemical Substance Inventory (TCSI)                             | Yes                    |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                          | Yes                    |

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information, including date of preparation or last revision**

Issue date 05-June-2018

Revision date -

**Version #**  
**HMIS® ratings**

01  
Health: 3\*  
Flammability: 1  
Physical hazard: 0

**NFPA ratings**



**Disclaimer**

Carbon, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.