

Date of issue 4/16/2025 (month/day/year)

Version 3

## Section 1. Chemical product and company identification

- A. Product name** : PITT-CHAR NX BASE (COLUMN)  
**Product code** : 00470428
- B. Relevant identified uses of the substance or mixture and uses advised against**  
**Product use** : Professional applications, Used by spraying.  
**Use of the substance/ mixture** : Coating.  
**Uses advised against** : Product is not intended, labelled or packaged for consumer use.
- C. Supplier's or Importer's information** : PPG SSC  
 (680-090)  
 19, Yecheon-ro 217beon-gil, Nam-gu,  
 Ulsan, Korea  
 Tel: +82-52-210-8222  
**Email Address** : Korea.MSDS@PPG.COM  
**Emergency telephone number:** : +82-52-210-8331

## Section 2. Hazards identification

- A. Hazard classification** : SKIN IRRITATION - Category 2  
 EYE IRRITATION - Category 2A  
 SKIN SENSITIZATION - Category 1  
 TOXIC TO REPRODUCTION - Category 1B  
 AQUATIC HAZARD (ACUTE) - Category 1  
 AQUATIC HAZARD (LONG-TERM) - Category 1  
 This product is classified in accordance with the Industrial Safety and Health Act and the Chemical Control Act.
- B. GHS label elements, including precautionary statements**  
**Symbol** : 
- Signal word** : 
- Hazard statements** :  H315 - Causes skin irritation.  
 H317 - May cause an allergic skin reaction.  
 H319 - Causes serious eye irritation.  
 H360 - May damage fertility or the unborn child.  
 H400 - Very toxic to aquatic life.  
 H410 - Very toxic to aquatic life with long lasting effects.

## Section 2. Hazards identification

### Precautionary statements

#### Prevention

- : P202 - Do not handle until all safety precautions have been read and understood.
- P280 - Wear protective gloves, protective clothing and eye or face protection.
- P273 - Avoid release to the environment.
- P261 - Avoid breathing vapor.
- P264 - Wash thoroughly after handling.

#### Response

- : P391 - Collect spillage.
- P308 + P313 - IF exposed or concerned: Get medical advice or attention.
- P302 + P352 - IF ON SKIN: Wash with plenty of water.
- P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.
- P362 + P364 - Take off contaminated clothing and wash it before reuse.
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337 + P313 - If eye irritation persists: Get medical advice or attention.
- P321 - Specific treatment (see the label).

#### Storage

- : Not applicable.

#### Disposal

- : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

C. Other hazards which do not result in classification : None known.

## Section 3. Composition/information on ingredients

### CAS number/other identifiers

#### CAS number

- : Not applicable.

| Chemical name                                                                          | Common name                               | Identifiers                      | %        |
|----------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------|----------|
| Zinc borate                                                                            | hexaboron dizinc undecaoxide              | CAS: 12767-90-7                  | 20 - <30 |
| Borate(5-), bis[μ-oxotetraoxodiborato(4-)]-, ammonium tetrahydrogen, dihydrate, (T-4)- | ammonium pentaborate                      | EC: 235-804-2<br>CAS: 12046-04-7 | 20 - <30 |
| 4,4'-(1-methylethylidene)bisphenol polymer with (chloromethyl)oxirane                  | EPOXY RESIN                               | EC: 234-521-1<br>CAS: 25068-38-6 | 10 - <20 |
| 1-CHLORO-2-PROPANOL PHOSPHATE                                                          | TRI(2-PROPYL)PHOSPHATE                    | EC: 500-033-5<br>CAS: 13674-84-5 | 5 - <10  |
| AMMONIUM POLYPHOSPHATE                                                                 | AMMONIUM POLYPHOSPHATE                    | EC: 237-158-7<br>CAS: 68333-79-9 | 5 - <10  |
| triphenyl phosphate                                                                    | Triphenylphosphate                        | EC: 269-789-9<br>CAS: 115-86-6   | 5 - <10  |
| Epoxy resin (MW ≤ 700)                                                                 | EPOXY RESIN ( AVERAGE MOLECULAR WT < 700) | EC: 204-112-2<br>CAS: 25068-38-6 | 1 - <5   |
| Cashew, nutshell liq.; Oil of cashew nutshell -                                        | CASHEW NUTSHELL LIQUID                    | EC: 500-033-5<br>CAS: 8007-24-7  | 1 - <5   |
| TRIMETHYLOLPROPANE                                                                     | Trimethylolpropane triacrylate            | EC: 232-355-4<br>CAS: 15625-89-5 | 1 - <5   |

### Section 3. Composition/information on ingredients

|                                                                                       |                                                  |                                  |          |
|---------------------------------------------------------------------------------------|--------------------------------------------------|----------------------------------|----------|
| TRIACRYLATE                                                                           |                                                  | EC: 239-701-3<br>CAS: 61789-73-9 | 0.1 - <1 |
| Quaternary ammonium compounds, benzylbis(hydrogenated tallow alkyl) methyl, chlorides | QUATERNARY AMMONIUM COMPOUNDS, METHYL, CHLORIDES | EC: 263-082-9                    |          |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

- A. Eye contact** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice. In case of accidental eye contact, avoid direct exposure to the sun or other sources of UV light as severe irritation including burns may result. These reactions can be delayed – get medical attention if pain, irritation or blistering occurs after contact.
- B. Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- C. Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- D. Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.
- E. Notes to physician** :  Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** :  No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

### Section 5. Fire-fighting measures

- A. Extinguishing media**
- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

## Section 5. Fire-fighting measures

- B. Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : ☒ Decomposition products may include the following materials:  
carbon oxides  
phosphorus oxides  
halogenated compounds  
metal oxide/oxides
- C. Special equipment for fire-fighting** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Fire-fighting procedures** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

## Section 6. Accidental release measures

- A. Personal precautions, protective equipment and emergency procedures** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- B. Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
- C. Methods and materials for containment and cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

## Section 7. Handling and storage

- A. Precautions for safe handling** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- B. Conditions for safe storage, including any incompatibilities** : Store between the following temperatures: 0 to 35°C (32 to 95°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### A. Occupational exposure limits

| Ingredient name                                                                                                                                                                                                         | Exposure limits                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  Zinc borate<br><br>Borate(5-), bis[μ-oxotetraoxodiborato(4-)]-, ammonium tetrahydrogen, dihydrate, (T-4)-<br><br>triphenyl phosphate | <b>ACGIH TLV (United States, 1/2013)</b><br>TWA: 3 mg/m <sup>3</sup> (Dusts and mists). Form: Respirable fraction.<br>TWA: 10 mg/m <sup>3</sup> (Dusts and mists). Form: Inhalable fraction.<br><b>ACGIH TLV (United States)</b><br>TWA: 10 mg/m <sup>3</sup> . Form: inhalable dust.<br>TWA: 3 mg/m <sup>3</sup> . Form: Respirable dust.<br><b>ISHA Article 42 (Republic of Korea, 1/2020)</b><br>TWA 8 hours: 3 mg/m <sup>3</sup> . |

**Recommended monitoring procedures** : Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

- B. Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### C. Personal protective equipment

## Section 8. Exposure controls/personal protection

- Respiratory protection** : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.
- Eye protection** : Chemical splash goggles.
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Gloves** : polyethylene butyl rubber
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

## Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### A. Appearance

**Physical state** : Liquid.

**Color** : Not available.

**B. Odor** : Characteristic.

**C. Odor threshold** : Not available.

**D. pH** : Not applicable.

**E. Melting/freezing point** : Not available.

**F. Boiling point/boiling range** : >37.78°C (>100°F)

**G. Flash point** : Closed cup: Not applicable.

**H. Evaporation rate** : Not available.

**I. Flammability (solid, gas)** : Not available.

**J. Lower and upper explosive (flammable) limits** : Not available.

**K. Vapor pressure** :

## Section 9. Physical and chemical properties

| Ingredient name                          | Vapor Pressure at 20°C |        |          | Vapor pressure at 50°C |     |        |
|------------------------------------------|------------------------|--------|----------|------------------------|-----|--------|
|                                          | mm Hg                  | kPa    | Method   | mm Hg                  | kPa | Method |
| 2,2-bis(acryloyloxymethyl)butyl acrylate | 0.00075                | 0.0001 | OECD 104 |                        |     |        |

### L. Solubility(ies)

| Media      | Result      |
|------------|-------------|
| cold water | Not soluble |

Solubility in water

: Not available.

Vapor density

: Not available.

### M.

Relative density

: 1.56

### N.

Partition coefficient: n-octanol/water

: Not applicable.

### O.

### P. Auto-ignition temperature

:

| Ingredient name                          | °C  | °F  | Method  |
|------------------------------------------|-----|-----|---------|
| 2,2-bis(acryloyloxymethyl)butyl acrylate | 385 | 725 | EU A.15 |

### Q. Decomposition temperature

: Not available.

### R. Viscosity

: Dynamic (room temperature): Not available.  
 Kinematic (room temperature): Not available.  
 Kinematic (40°C (104°F)): >21 mm<sup>2</sup>/s (>21 cSt)

Flow time (ISO 2431)

: Not available.

### S. Molecular weight

: Not applicable.

## Section 10. Stability and reactivity

### A. Chemical stability

: The product is stable.

Possibility of hazardous reactions

: Under normal conditions of storage and use, hazardous reactions will not occur.

### B. Conditions to avoid

: When exposed to high temperatures may produce hazardous decomposition products.

### C. Incompatible materials

: Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

### D. Hazardous decomposition products

: Depending on conditions, decomposition products may include the following materials: carbon oxides phosphorus oxides halogenated compounds metal oxide/oxides

## Section 11. Toxicological information

**A. Information on the likely routes of exposure** : Not available.

### Potential acute health effects

- Inhalation** : No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.  
**Skin contact** : Causes skin irritation. May cause an allergic skin reaction.  
**Eye contact** : Causes serious eye irritation.

### Over-exposure signs/symptoms

- Inhalation** : Adverse symptoms may include the following:  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
 irritation  
 redness  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations
- Eye contact** : Adverse symptoms may include the following:  
 pain or irritation  
 watering  
 redness

## B. Health hazards

### Acute toxicity

| Product/ingredient name                                                                 | Result                          | Species | Dose        | Exposure |
|-----------------------------------------------------------------------------------------|---------------------------------|---------|-------------|----------|
| Zinc borate                                                                             | LC50 Inhalation Dusts and mists | Rat     | >5 mg/l     | 4 hours  |
| Borate(5-), bis[μ-oxotetraoxodiborato (4-)]-, ammonium tetrahydrogen, dihydrate, (T-4)- | LD50 Dermal                     | Rabbit  | >5000 mg/kg | -        |
|                                                                                         | LD50 Oral                       | Rat     | >5000 mg/kg | -        |
|                                                                                         | LD50 Dermal                     | Rabbit  | >2000 mg/kg | -        |
|                                                                                         | LD50 Oral                       | Rat     | 4200 mg/kg  | -        |
| 4,4'-(1-methylethylidene)bisphenol polymer with (chloromethyl)oxirane                   | LD50 Dermal                     | Rabbit  | >2 g/kg     | -        |
|                                                                                         | LD50 Oral                       | Rat     | >2 g/kg     | -        |
| 1-CHLORO-2-PROPANOL PHOSPHATE                                                           | LC50 Inhalation Dusts and mists | Rat     | >7 mg/l     | 4 hours  |
|                                                                                         | LD50 Dermal                     | Rabbit  | >5 g/kg     | -        |
| AMMONIUM POLYPHOSPHATE triphenyl phosphate                                              | LD50 Oral                       | Rat     | 1500 mg/kg  | -        |
|                                                                                         | LD50 Oral                       | Rat     | 4.74 g/kg   | -        |
|                                                                                         | LD50 Dermal                     | Rabbit  | >7900 mg/kg | -        |
|                                                                                         | LD50 Oral                       | Rat     | 3500 mg/kg  | -        |
| Epoxy resin (MW ≤ 700)                                                                  | LD50 Dermal                     | Rabbit  | >2 g/kg     | -        |
|                                                                                         | LD50 Oral                       | Rat     | >2 g/kg     | -        |

## Section 11. Toxicological information

|                                   |             |        |            |   |
|-----------------------------------|-------------|--------|------------|---|
| TRIMETHYLOLPROPANE<br>TRIACRYLATE | LD50 Dermal | Rabbit | 5170 mg/kg | - |
|                                   | LD50 Oral   | Rat    | 5.19 g/kg  | - |

**Conclusion/Summary** : There are no data available on the mixture itself.

### Irritation/Corrosion

| Product/ingredient name                                                      | Result                   | Species | Score | Exposure           | Observation |
|------------------------------------------------------------------------------|--------------------------|---------|-------|--------------------|-------------|
| zinc borate                                                                  | Eyes - Cornea opacity    | Rabbit  | 33    | 24 hours           | 74 hours    |
| 4,4'-(1-methylethylidene)<br>bisphenol polymer with<br>(chloromethyl)oxirane | Eyes - Mild irritant     | Rabbit  | -     | 0.083g<br>100 mg   | -           |
|                                                                              | Eyes - Moderate irritant | Rabbit  | -     | -                  | -           |
|                                                                              | Skin - Moderate irritant | Rabbit  | -     | -                  | -           |
|                                                                              | Skin - Moderate irritant | Rabbit  | -     | 24 hours 500<br>UI | -           |
|                                                                              | Skin - Severe irritant   | Rabbit  | -     | 24 hours 2<br>mg   | -           |
| Epoxy resin (MW ≤ 700)                                                       | Eyes - Mild irritant     | Rabbit  | -     | -                  | -           |
|                                                                              | Skin - Mild irritant     | Rabbit  | -     | -                  | -           |
| TRIMETHYLOLPROPANE<br>TRIACRYLATE                                            | Skin - Irritant          | Rabbit  | -     | -                  | -           |

### Conclusion/Summary

**Skin** : There are no data available on the mixture itself.

**Eyes** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

### Sensitization

| Product/ingredient name                                                      | Route of exposure | Species | Result      |
|------------------------------------------------------------------------------|-------------------|---------|-------------|
| 4,4'-(1-methylethylidene)<br>bisphenol polymer with<br>(chloromethyl)oxirane | skin              | Mouse   | Sensitizing |
| Epoxy resin (MW ≤ 700)                                                       | skin              | Mouse   | Sensitizing |
| TRIMETHYLOLPROPANE<br>TRIACRYLATE                                            | skin              | Rabbit  | Sensitizing |

### Conclusion/Summary

**Skin** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

### Mutagenicity

**Conclusion/Summary** : There are no data available on the mixture itself.

### Carcinogenicity

**Conclusion/Summary** : There are no data available on the mixture itself.

### Reproductive toxicity

## Section 11. Toxicological information

| Product/ingredient name | Maternal toxicity | Fertility | Development toxin | Species | Dose            | Exposure                 |
|-------------------------|-------------------|-----------|-------------------|---------|-----------------|--------------------------|
| Zinc borate             | Positive          | Positive  | Positive          | Rat     | Oral: 375 mg/kg | 90 days; 7 days per week |

**Conclusion/Summary** : There are no data available on the mixture itself.

### Teratogenicity

**Conclusion/Summary** : There are no data available on the mixture itself.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

| Name                                            | Classification | Route of exposure | Target organs |
|-------------------------------------------------|----------------|-------------------|---------------|
| Cashew, nutshell liq.; Oil of cashew nutshell - | Category 2     | -                 | -             |

### Aspiration hazard

Not available.

### Potential chronic health effects

- General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : ☒ No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : ☒ May damage fertility or the unborn child.

### Additional information

Sanding and grinding dusts may be harmful if inhaled. Acrylate components of the mixture have irritating properties. Prolonged or repeated contact with skin or mucous membrane may result in irritation symptoms, such as redness, blistering, dermatitis etc. May cause allergic skin reactions with repeated exposure. The inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract. Ingestion may cause nausea, weakness and central nervous system effects. In case of accidental skin contact, avoid direct exposure to the sun or other sources of UV light as severe irritation including burns may result. These reactions can be delayed – get medical attention if pain, irritation, rash or blistering occurs after contact.

| Chemical name                                                                          | Identifiers                                             | GHS Classification                                                                                                                                                                          |
|----------------------------------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Zinc borate                                                                            | CAS: 12767-90-7<br>EC: 235-804-2                        | EYE IRRITATION - Category 2A<br>TOXIC TO REPRODUCTION - Category 1B<br>AQUATIC HAZARD (ACUTE) - Category 1<br>AQUATIC HAZARD (LONG-TERM) - Category 1<br>TOXIC TO REPRODUCTION - Category 2 |
| Borate(5-), bis[μ-oxotetraoxodiborato(4-)]-, ammonium tetrahydrogen, dihydrate, (T-4)- | CAS: 12046-04-7<br><br>EC: 234-521-1<br>CAS: 25068-38-6 | SKIN IRRITATION - Category 2                                                                                                                                                                |
| 4,4'-(1-methylethylidene)bisphenol polymer with (chloromethyl)oxirane                  |                                                         |                                                                                                                                                                                             |

## Section 11. Toxicological information

|                                                                                             |                                                                                                        |                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1-CHLORO-2-PROPANOL<br>PHOSPHATE                                                            | EC: 500-033-5                                                                                          | EYE IRRITATION - Category 2A<br>SKIN SENSITIZATION - Category 1<br>AQUATIC HAZARD (LONG-TERM) - Category 2<br>ACUTE TOXICITY (oral) - Category 4                                                                                                              |
|                                                                                             | CAS: 13674-84-5                                                                                        |                                                                                                                                                                                                                                                               |
| AMMONIUM POLYPHOSPHATE<br><br>triphenyl phosphate<br><br>Epoxy resin (MW ≤ 700)             | EC: 237-158-7                                                                                          | ACUTE TOXICITY (dermal) - Category 4<br>ACUTE TOXICITY (inhalation) - Category 4<br>AQUATIC HAZARD (LONG-TERM) - Category 3<br>EYE IRRITATION - Category 2A                                                                                                   |
|                                                                                             | CAS: 68333-79-9<br>EC: 269-789-9<br>CAS: 115-86-6<br>EC: 204-112-2<br>CAS: 25068-38-6<br>EC: 500-033-5 | AQUATIC HAZARD (ACUTE) - Category 1<br>AQUATIC HAZARD (LONG-TERM) - Category 1<br>SKIN IRRITATION - Category 2<br>EYE IRRITATION - Category 2A<br>SKIN SENSITIZATION - Category 1B<br>AQUATIC HAZARD (LONG-TERM) - Category 2<br>SKIN IRRITATION - Category 2 |
| Cashew, nutshell liq.; Oil of cashew<br>nutshell -                                          | CAS: 8007-24-7                                                                                         |                                                                                                                                                                                                                                                               |
|                                                                                             | EC: 232-355-4                                                                                          | SPECIFIC TARGET ORGAN TOXICITY<br>(REPEATED EXPOSURE) - Category 2<br>AQUATIC HAZARD (ACUTE) - Category 1<br>SKIN IRRITATION - Category 2                                                                                                                     |
| TRIMETHYLOLPROPANE<br>TRIACRYLATE                                                           | CAS: 15625-89-5                                                                                        |                                                                                                                                                                                                                                                               |
|                                                                                             | EC: 239-701-3                                                                                          | EYE IRRITATION - Category 2A<br>SKIN SENSITIZATION - Category 1<br>AQUATIC HAZARD (ACUTE) - Category 1<br>AQUATIC HAZARD (LONG-TERM) - Category 1<br>SKIN IRRITATION - Category 2                                                                             |
| Quaternary ammonium compounds,<br>benzylbis(hydrogenated tallow alkyl)<br>methyl, chlorides | CAS: 61789-73-9                                                                                        |                                                                                                                                                                                                                                                               |
|                                                                                             | EC: 263-082-9                                                                                          | SERIOUS EYE DAMAGE - Category 1<br>AQUATIC HAZARD (ACUTE) - Category 1<br>AQUATIC HAZARD (LONG-TERM) - Category 1                                                                                                                                             |

## Section 12. Ecological information

### A. Ecotoxicity

| Product/ingredient name                                                                                                                                                                                                                                  | Result                                                             | Species                                                                 | Exposure                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------|
| Zinc borate<br><br>Borate(5-), bis[μ-oxotetraoxodiborato(4-)]-, ammonium tetrahydrogen, dihydrate, (T-4)-4,4'-(1-methylethylidene) bisphenol polymer with (chloromethyl)oxirane AMMONIUM POLYPHOSPHATE triphenyl phosphate<br><br>Epoxy resin (MW ≤ 700) | Acute EC50 76 mg/l<br>Acute LC50 2.17 mg/l<br>Acute LC50 >100 mg/l | Daphnia - <i>Daphnia magna</i><br>Fish - <i>Salmo gairdneri</i><br>Fish | 48 hours<br>96 hours<br>96 hours |
|                                                                                                                                                                                                                                                          | Chronic NOEC 0.3 mg/l                                              | Daphnia                                                                 | 21 days                          |
|                                                                                                                                                                                                                                                          | Acute EC50 730.5 mg/l Fresh water                                  | Daphnia - <i>Daphnia magna</i> - Neonate                                | 48 hours                         |
|                                                                                                                                                                                                                                                          | Acute LC50 0.09 mg/l Fresh water                                   | Daphnia - <i>Daphnia magna</i> - Neonate                                | 48 hours                         |
|                                                                                                                                                                                                                                                          | Chronic NOEC 0.1 mg/l                                              | Algae - <i>Desmodesmus subspicatus</i>                                  | 3 days                           |
|                                                                                                                                                                                                                                                          | Acute LC50 1.8 mg/l<br>Chronic NOEC 0.3 mg/l                       | Daphnia<br>Daphnia                                                      | 48 hours<br>21 days              |

## Section 12. Ecological information

|                                   |                      |      |          |
|-----------------------------------|----------------------|------|----------|
| TRIMETHYLOLPROPANE<br>TRIACRYLATE | Acute LC50 0.87 mg/l | Fish | 96 hours |
|-----------------------------------|----------------------|------|----------|

### B. Persistence and degradability

| Product/ingredient name                                                                                | Test      | Result        | Dose | Inoculum |
|--------------------------------------------------------------------------------------------------------|-----------|---------------|------|----------|
| 4,4'-(1-methylethylidene)<br>bisphenol polymer with<br>(chloromethyl)oxirane<br>Epoxy resin (MW ≤ 700) | OECD 301F | 5 % - 28 days | -    | -        |
|                                                                                                        | OECD 301F | 5 % - 28 days | -    | -        |

| Product/ingredient name                                                                                | Aquatic half-life | Photolysis | Biodegradability |
|--------------------------------------------------------------------------------------------------------|-------------------|------------|------------------|
| 4,4'-(1-methylethylidene)<br>bisphenol polymer with<br>(chloromethyl)oxirane<br>Epoxy resin (MW ≤ 700) | -                 | -          | Not readily      |
|                                                                                                        | -                 | -          | Not readily      |

### C. Bioaccumulative potential

| Product/ingredient name                                                      | LogP <sub>ow</sub> | BCF    | Potential |
|------------------------------------------------------------------------------|--------------------|--------|-----------|
| Zinc borate                                                                  | -                  | 60960  | High      |
| 4,4'-(1-methylethylidene)<br>bisphenol polymer with<br>(chloromethyl)oxirane | 2.64 to 3.78       | 31     | Low       |
| 1-CHLORO-2-PROPANOL<br>PHOSPHATE                                             | 2.68               | 7.94   | Low       |
| triphenyl phosphate                                                          | 4.63               | 190.55 | Low       |
| Epoxy resin (MW ≤ 700)                                                       | 3                  | 31     | Low       |
| Cashew, nutshell liq.; Oil of<br>cashew nutshell -                           | >4.78              | -      | High      |
| TRIMETHYLOLPROPANE<br>TRIACRYLATE                                            | 0.67               | -      | Low       |

### D. Mobility in soil

Soil/Water partition coefficient : Not available.

E. Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

- A. Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

## Section 13. Disposal considerations

**B. Disposal precautions** : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

|                                       | UN                                                                                                                                                                                                                                   | IMDG                                                                                                                                                                                                                                 | IATA                                                                                                                                                                                                                                   |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A. UN number</b>                   | UN3082                                                                                                                                                                                                                               | UN3082                                                                                                                                                                                                                               | UN3082                                                                                                                                                                                                                                 |
| <b>B. UN proper shipping name</b>     | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br> hexaboron dizinc undecaoxide, reaction product: bisphenol-A-(epichlorohydrin); epoxy resin) | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br> hexaboron dizinc undecaoxide, reaction product: bisphenol-A-(epichlorohydrin); epoxy resin) | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br> hexaboron dizinc undecaoxide, reaction product: bisphenol-A-(epichlorohydrin); epoxy resin) |
| <b>C. Transport hazard class(es)</b>  | 9                                                                                                                                                                                                                                    | 9                                                                                                                                                                                                                                    | 9                                                                                                                                                                                                                                      |
| <b>D. Packing group</b>               | III                                                                                                                                                                                                                                  | III                                                                                                                                                                                                                                  | III                                                                                                                                                                                                                                    |
| <b>Environmental hazards</b>          | Yes.                                                                                                                                                                                                                                 | Yes.                                                                                                                                                                                                                                 | Yes.                                                                                                                                                                                                                                   |
| <b>E. Marine pollutant substances</b> | Not applicable.                                                                                                                                                                                                                      | (hexaboron dizinc undecaoxide)                                                                                                                                                                                                       | Not applicable.                                                                                                                                                                                                                        |

### Additional information

**UN** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

**IMDG** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

**IATA** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

### F. Special precaution which a user to be aware of or needs to comply with in connection with transport or transportation

**Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to IMO instruments** : Not applicable.

## Section 15. Regulatory information

### A. Regulation according to ISHA

ISHA article 117 : None of the components are listed.  
(Harmful substances prohibited from manufacture)

ISHA article 118 : None of the components are listed.  
(Harmful substances requiring permission)

Article 2 of Youth Protection Act on Substances Hazardous to Youth : It is not allowed to sell to persons under the age of 19.

### Exposure Limits of Chemical Substances and Physical Factors

The following components have an OEL:

ISHA Enforcement Regs Annex 19 (Exposure standards established for harmful factors) : None of the components are listed.

ISHA Enforcement Regs Annex 11-5 (Harmful factors subject to Work Environment Measurement) : None of the components are listed.

ISHA Enforcement Regs Annex 22 (Harmful Factors Subject to Special Health Check-up) : None of the components are listed.

Standard of Industrial Safety and Health Annex 12 (Hazardous substances subject to control) : The following components are listed: zinc and its compounds

### B. Regulation according to Chemicals Control Act

Article 11 (TRI) : The following components are listed: Boron and its compounds, 4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane, 4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane

Article 18 Prohibited (K-Reach Article 27) : None of the components are listed.

Article 19 Subject to authorization (K-Reach Article 25) : None of the components are listed.

Article 20 Restricted (K-Reach Article 27) : None of the components are listed.

Article 20 Toxic Chemicals (K-Reach Article 20) :  Toxic

Korea inventory : All components are listed or exempted.

## Section 15. Regulatory information

**Article 39 (Accident  
Precaution Chemicals)** : None of the components are listed.

**C. Dangerous Materials  
Safety Management Act** : ☒ Not applicable.

**D. Wastes regulation** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

**E. Regulation according to other foreign laws**

**Safety, health and  
environmental  
regulations specific for  
the product** : No known specific national and/or regional regulations applicable to this product (including its ingredients).

## Section 16. Other information

**A. References** : Korean Ministry of Environment; Chemical Control Act  
Korean Ministry of Labor; Industrial Safety and Health Act  
NIER Notice  
Registry of Toxic Effects of Chemical Substances (RTECS)  
U.S. Environmental Protection Agency, AQUIRE (Aquatic toxicity Information  
Retrieval) ECOTOX Database System.

**B. First issue date** : 1/31/2023

**C. Date of issue/Date of  
revision** : **4/16/2025**

**D. Version** : **3**

**Prepared by** : EHS

**E. Other**

☒ Indicates information that has changed from previously issued version.

### Disclaimer

*The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.*