

## Herculite Ultra Flowable

### 1. Product and company identification

**Product name** : Herculite Ultra Flowable  
**Material uses** : Dental product  
**Manufacturer** : **Kerr Corporation**  
 1717 West Collins Avenue  
 Orange, CA 92867-5422  
 Telephone no.: 1-800-KERR-123  
  
**Prepared by** : IHS  
**In case of emergency** : CHEMTREC® (24 hours) U.S. : 1-800-424-9300 International: +1-703-527-3887

### 2. Hazards identification

**Physical state** : Solid. [Paste.]  
**Color** : Not available.  
**Odor** : Odorless.  
**Emergency overview**  
**Signal word** : WARNING!  
**Hazard statements** : CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.  
  
**Precautions** : Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.  
**Routes of entry** : Dermal contact. Eye contact. Inhalation.  
**Potential acute health effects**  
**Inhalation** : Irritating to respiratory system.  
**Ingestion** : No known significant effects or critical hazards.  
**Skin** : Irritating to skin.  
**Eyes** : Irritating to eyes.  
**Potential chronic health effects**  
**Chronic effects** : Contains material that may cause target organ damage, based on animal data.  
**Carcinogenicity** : No known significant effects or critical hazards.  
**Mutagenicity** : No known significant effects or critical hazards.  
**Teratogenicity** : No known significant effects or critical hazards.  
**Developmental effects** : No known significant effects or critical hazards.  
  
**Fertility effects** : No known significant effects or critical hazards.  
**Target organs** : Contains material which may cause damage to the following organs: upper respiratory tract, skin, bones, eye, lens or cornea.  
  
**Over-exposure signs/symptoms**  
**Inhalation** : Adverse symptoms may include the following:  
 respiratory tract irritation  
 coughing

## 2. Hazards identification

- Ingestion** : No specific data.
- Skin** : Adverse symptoms may include the following:  
irritation  
redness
- Eyes** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Medical conditions aggravated by over-exposure** : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

## 3. Composition/information on ingredients

| Name   | CAS number | %     |
|--|------------|-------|
| Poly(oxy-1,2-ethanediyl), $\alpha,\alpha'$ -[(1-methylethylidene)di-4,1-phenylene]bis[ $\omega$ -[(2-methyl-1-oxo-2-propen-1-yl)oxy]-ytterbium trifluoride | 41637-38-1 | 10-30 |
| 2,2'-ethylenedioxydiethyl dimethacrylate   | 13760-80-0 | 5-10  |
| 3-trimethoxysilylpropyl methacrylate   | 109-16-0   | 1-10  |
| (1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate   | 2530-85-0  | 1-5   |
| silicon dioxide  | 1565-94-2  | 1-5   |
|  | 7631-86-9  | 1-5   |

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.

## 4. First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin contact** : No special measures required. In case of contact, immediately flush skin with plenty of water. Get medical attention if symptoms occur.
- Inhalation** : No special measures required. If inhaled, remove to fresh air. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Get medical attention if adverse health effects persist or are severe.
- 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.

### Antidote information

| Product/ingredient name       | Antidote information |
|-------------------------------|----------------------|
| No antidote information known |                      |

- Notes to physician** : Treat symptomatically.

## 5. Fire-fighting measures

**Flammability of the product** : No specific fire or explosion hazard.

### Extinguishing media

**Suitable** : Use an extinguishing agent suitable for the surrounding fire.  
**Not suitable** : None known.

**Special exposure hazards** : 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. In case of major fire and large quantities:

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
 carbon dioxide  
 carbon monoxide  
 halogenated compounds  
 metal oxide/oxides

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## 6. Accidental release measures

**Personal precautions** : Low release. For professional use only. Handling of product in very small amounts or in situations where release is highly unlikely

**Environmental precautions** : Low release. 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).

### Methods for cleaning up

**Small spill** : Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.

**Large spill** : Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.

## 7. Handling and storage

**Handling** : No special measures are required for small quantities under normal and intended conditions of product use. For professional use only. Put on appropriate personal protective equipment (see Section 8). Handle with care and dispose in a safe manner.

**Storage** : 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. 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.

## 8. Exposure controls/personal protection

| <u>Occupational exposure limits</u> |                 | TWA (8 hours) |                   |       | STEL (15 mins) |                   |       | Ceiling |                   |       |           |
|-------------------------------------|-----------------|---------------|-------------------|-------|----------------|-------------------|-------|---------|-------------------|-------|-----------|
| Ingredient                          | List name       | ppm           | mg/m <sup>3</sup> | Other | ppm            | mg/m <sup>3</sup> | Other | ppm     | mg/m <sup>3</sup> | Other | Notations |
| ytterbium trifluoride, as F         | US ACGIH 6/2013 | -             | 2.5               | -     | -              | -                 | -     | -       | -                 | -     |           |
|                                     | AB 4/2009       | -             | 2.5               | -     | -              | -                 | -     | -       | -                 | -     |           |
|                                     | BC 7/2013       | -             | 2.5               | -     | -              | -                 | -     | -       | -                 | -     |           |
|                                     | ON 1/2013       | -             | 2.5               | -     | -              | -                 | -     | -       | -                 | -     |           |
|                                     | QC 12/2012      | -             | 2.5               | -     | -              | -                 | -     | -       | -                 | -     |           |

Consult local authorities for acceptable exposure limits.

## 8. Exposure controls/personal protection

|  |  |
|--|--|
| <b>Recommended monitoring procedures</b> | : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. 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>Engineering measures</b>              | : No special ventilation requirements.   |
| <b>Hygiene measures</b>                  | : No special measures are required.  |
| <b>Personal protection</b>               |  |
| <b>Respiratory</b>                       | : A respirator is not needed under normal and intended conditions of product use.  |
| <b>Hands</b>                             | : 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. |
| <b>Eyes</b>                              | : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.  |
| <b>Skin</b>                              | : 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.  |
| <b>Environmental exposure controls</b>   | : 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.   |

## 9. Physical and chemical properties

|                                   |   |
|-----------------------------------|---|
| <b>Physical state</b>             | : Solid. [Paste.]   |
| <b>Flash point</b>                | : Not available.  |
| <b>Auto-ignition temperature</b>  | : Not available.  |
| <b>Flammable limits</b>           | : Not available.  |
| <b>Color</b>                      | : Not available.  |
| <b>Odor</b>                       | : Odorless.   |
| <b>pH</b>                         | : Not applicable.   |
| <b>Boiling/condensation point</b> | : Not applicable.   |
| <b>Melting/freezing point</b>     | : Not applicable.   |
| <b>Relative density</b>           | : 2 g/mL  |
| <b>Density</b>                    | : Not available.  |
| <b>Vapor pressure</b>             | : Not available.  |
| <b>Vapor density</b>              | : Not applicable  |
| <b>Odor threshold</b>             | : Not available.  |
| <b>Evaporation rate</b>           | : Not applicable.   |
| <b>Viscosity</b>                  | : Medium to high  |
| <b>Solubility</b>                 | : Insoluble in the following materials: cold water and hot water. |

## 9. Physical and chemical properties

**LogK<sub>ow</sub>** : Not available.

## 10. Stability and reactivity

- Chemical stability** : The product is stable.
- Conditions to avoid** : Keep away from heat.
- Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials and alkalis.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.  
Under normal conditions of storage and use, hazardous polymerization will not occur.

## 11. Toxicological information

### Acute toxicity

| Product/ingredient name                  | Result    | Species | Dose        | Exposure |
|--|-----------|---------|-------------|----------|
| 3-trimethoxysilylpropyl methacrylate     | LD50 Oral | Rat     | 23504 mg/kg | -        |
| 2,2'-ethylenedioxydiethyl dimethacrylate | LD50 Oral | Rat     | 10837 mg/kg | -        |

**Conclusion/Summary** : Based on the criteria of the protocol, this product is considered non-cytotoxic per ISO 10993-5.

### Chronic toxicity

Not available.

### Irritation/Corrosion

| Product/ingredient name              | Result               | Species | Score | Exposure                | Observation |
|--------------------------------------|----------------------|---------|-------|-------------------------|-------------|
| 3-trimethoxysilylpropyl methacrylate | Eyes - Mild irritant | Rabbit  | -     | 24 hours 500 milligrams | -           |
|                                      | Skin - Mild irritant | Rabbit  | -     | 24 hours 500 milligrams | -           |

### Sensitizer

Not available.

**Conclusion/Summary** : Not available.  
**Skin** : Kligman score: Grade I (weak sensitizer)

### Carcinogenicity

#### Classification

| Product/ingredient name               | ACGIH | IARC | EPA | NIOSH | NTP | OSHA |
|---------------------------------------|-------|------|-----|-------|-----|------|
| ytterbium trifluoride                 | A4    | 3    | -   | -     | -   | -    |
| Silica, amorphous, fumed, cryst.-free | -     | 3    | -   | -     | -   | -    |
| silicon dioxide                       | -     | 3    | -   | -     | -   | -    |

### Mutagenicity

## 11. Toxicological information

| Product/ingredient name  | Test                                | Experiment                                | Result   |
|--------------------------|-------------------------------------|---|----------|
| Herculite Ultra Flowable | 471 Bacterial Reverse Mutation Test | Experiment: In vitro<br>Subject: Bacteria | Negative |

**Conclusion/Summary** : No mutagenic effect.

### Teratogenicity

Not available.

### Reproductive toxicity

Not available.

## 12. Ecological information

**Ecotoxicity** : No known significant effects or critical hazards.

### Aquatic ecotoxicity

| Product/ingredient name | Result                            | Species                                 | Exposure |
|-------------------------|-----------------------------------|---|----------|
| silicon dioxide         | Acute EC50 55.5 mg/l Fresh water  | Algae - Pseudokirchneriella subcapitata | 72 hours |
|                         | Chronic NOEC 4.6 mg/l Fresh water | Algae - Pseudokirchneriella subcapitata | 72 hours |

### Persistence/degradability

Not available.

**Partition coefficient: n-octanol/water** : Not available.

**Bioconcentration factor** : Not available.

**Mobility** : Not available.

**Toxicity of the products of biodegradation** : Not available.

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

## 13. Disposal considerations

**Waste disposal** : 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.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

## 14. Transport information

**TDG/IMDG/IATA** : Not regulated.

## 15. Regulatory information

- United States inventory (TSCA 8b)** : Not determined.
- WHMIS (Canada)** : Class D-2B: Material causing other toxic effects (Toxic).
- Canadian lists**
- Canadian NPRI** : None of the components are listed.
- CEPA Toxic substances** : The following components are listed: Inorganic fluorides
- Canada inventory** : Not determined.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

### International regulations

- International lists** :
- Australia inventory (AICS)**: Not determined.
  - China inventory (IECSC)**: Not determined.
  - Japan inventory**: Not determined.
  - Korea inventory**: Not determined.
  - Malaysia Inventory (EHS Register)**: Not determined.
  - New Zealand Inventory of Chemicals (NZIoC)**: Not determined.
  - Philippines inventory (PICCS)**: Not determined.
  - Taiwan inventory (CSNN)**: Not determined.
- Chemical Weapons Convention List Schedule I Chemicals** : Not listed
- Chemical Weapons Convention List Schedule II Chemicals** : Not listed
- Chemical Weapons Convention List Schedule III Chemicals** : Not listed

## 16. Other information

- Label requirements** : CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

**Hazardous Material Information System (U.S.A.)** :

|                  |   |   |
|------------------|---|---|
| Health           | * | 2 |
| Flammability     |   | 0 |
| Physical hazards |   | 0 |
|                  |   |   |

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

- Date of issue** : 2/02/2015.
- Date of previous issue** : 7/18/2014.

## 16. Other information

**Version** : 2.01

Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.