



# SAFETY DATA SHEET

## 1. Identification

|                                                               |                                          |
|---------------------------------------------------------------|------------------------------------------|
| <b>Product identifier</b>                                     | <b>QD® Contact Cleaner</b>               |
| <b>Other means of identification</b>                          |                                          |
| <b>Product Code</b>                                           | No. 02131 (Item# 1003219)                |
| <b>Recommended use</b>                                        | Electronic contact cleaner               |
| <b>Recommended restrictions</b>                               | None known.                              |
| <b>Manufacturer/Importer/Supplier/Distributor information</b> |                                          |
| <b>Manufactured or sold by:</b>                               |                                          |
| <b>Company name</b>                                           | CRC Industries, Inc.                     |
| <b>Address</b>                                                | 885 Louis Dr.<br>Warminster, PA 18974 US |
| <b>Telephone</b>                                              |                                          |
| <b>General Information</b>                                    | 215-674-4300                             |
| <b>Technical Assistance</b>                                   | 800-521-3168                             |
| <b>Customer Service</b>                                       | 800-272-4620                             |
| <b>24-Hour Emergency (CHEMTREC)</b>                           | 800-424-9300 (US)                        |
| <b>Website</b>                                                | www.crcindustries.com                    |

## 2. Hazard(s) identification

|                              |                                                        |                             |
|------------------------------|--------------------------------------------------------|-----------------------------|
| <b>Physical hazards</b>      | Flammable liquids                                      | Category 2                  |
| <b>Health hazards</b>        | Skin corrosion/irritation                              | Category 2                  |
|                              | Serious eye damage/eye irritation                      | Category 2B                 |
|                              | Reproductive toxicity                                  | Category 1A                 |
|                              | Specific target organ toxicity, single exposure        | Category 3 narcotic effects |
|                              | Aspiration hazard                                      | Category 1                  |
| <b>Environmental hazards</b> | Hazardous to the aquatic environment, acute hazard     | Category 2                  |
|                              | Hazardous to the aquatic environment, long-term hazard | Category 2                  |
| <b>OSHA defined hazards</b>  | Simple asphyxiant                                      |                             |
| <b>Label elements</b>        |                                                        |                             |



|                         |                                                                                                                                                                                                                                                                                                                                       |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Signal word</b>      | Danger                                                                                                                                                                                                                                                                                                                                |
| <b>Hazard statement</b> | Highly flammable liquid and vapor. May displace oxygen and cause rapid suffocation. May be fatal if swallowed and enters airways. Causes skin irritation. Causes eye irritation. May cause drowsiness or dizziness. May damage fertility or the unborn child. Toxic to aquatic life. Toxic to aquatic life with long lasting effects. |

## Precautionary statement

### Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Use only with adequate ventilation; maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Avoid breathing mist/vapor. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Wear respiratory protection. Avoid release to the environment.

### Response

If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If exposed or concerned: Get medical advice/attention. In case of fire: Do not use water jet as an extinguisher, as this will spread the fire. Collect spillage.

### Storage

Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.

### Disposal

Dispose of contents/container in accordance with local/regional/national regulations.

### Hazard(s) not otherwise classified (HNOC)

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

### Supplemental information

When exposed to extreme heat or hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as hydrogen fluoride.

---

## 3. Composition/information on ingredients

### Mixtures

| Chemical name                           | Common name and synonyms | CAS number | %       |
|-----------------------------------------|--------------------------|------------|---------|
| naphtha (petroleum), hydrotreated light |                          | 64742-49-0 | 40 - 50 |
| 1,1,1,3,3-pentafluorobutane             | HFC-365mfc               | 406-58-6   | 20 - 30 |
| 2-methylpentane                         |                          | 107-83-5   | 20 - 30 |
| 2,2,4-trimethylpentane                  |                          | 540-84-1   | 5 - 10  |
| n-hexane                                |                          | 110-54-3   | 1 - 3   |
| methanol                                |                          | 67-56-1    | < 1     |

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

---

## 4. First-aid measures

### Inhalation

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory tract irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately.

### Skin contact

Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

### Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

### Ingestion

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.

### Most important symptoms/effects, acute and delayed

Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Fatigue. Nausea, vomiting. Very high exposure can cause suffocation from lack of oxygen. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves. Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Skin irritation. May cause redness and pain.

### Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Thermal 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 under observation. Symptoms may be delayed.

**General information** Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. 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. Wash contaminated clothing before reuse.

---

## 5. Fire-fighting measures

**Suitable extinguishing media** Water fog. Foam. Carbon dioxide (CO<sub>2</sub>). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only. Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical** Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed. When exposed to extreme heat or hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as hydrogen fluoride.

**Special protective equipment and precautions for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire-fighting equipment/instructions** In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards** Highly flammable liquid and vapor.

---

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** In the event of a leak evacuate all personnel until ventilation can restore oxygen concentrations to safe levels. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapor. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. 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** Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. This product is miscible in water. 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. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

**Environmental precautions** Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. 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. Use appropriate containment to avoid environmental contamination.

## 7. Handling and storage

### Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Do not enter storage areas or confined spaces unless adequately ventilated. Use only outdoors or in a well-ventilated area. Oxygen concentration should not fall below 19.5 % at sea level (pO<sub>2</sub> = 135 mmHg). Mechanical ventilation or local exhaust ventilation may be required. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices. For product usage instructions, see the product label.

### Conditions for safe storage, including any incompatibilities

Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components                                               | Type | Value                             |
|----------------------------------------------------------|------|-----------------------------------|
| 2,2,4-trimethylpentane (CAS 540-84-1)                    | PEL  | 2350 mg/m <sup>3</sup><br>500 ppm |
| methanol (CAS 67-56-1)                                   | PEL  | 260 mg/m <sup>3</sup><br>200 ppm  |
| naphtha (petroleum), hydrotreated light (CAS 64742-49-0) | PEL  | 400 mg/m <sup>3</sup><br>100 ppm  |
| n-hexane (CAS 110-54-3)                                  | PEL  | 1800 mg/m <sup>3</sup><br>500 ppm |

#### US. ACGIH Threshold Limit Values

| Components                     | Type | Value    |
|--------------------------------|------|----------|
| 2-methylpentane (CAS 107-83-5) | STEL | 1000 ppm |
|                                | TWA  | 500 ppm  |
| methanol (CAS 67-56-1)         | STEL | 250 ppm  |
|                                | TWA  | 200 ppm  |
| n-hexane (CAS 110-54-3)        | TWA  | 50 ppm   |

#### US. NIOSH: Pocket Guide to Chemical Hazards

| Components                            | Type    | Value                           |
|---------------------------------------|---------|---------------------------------|
| 2,2,4-trimethylpentane (CAS 540-84-1) | Ceiling | 1800 mg/m <sup>3</sup>          |
|                                       |         | 385 ppm                         |
|                                       | TWA     | 350 mg/m <sup>3</sup><br>75 ppm |

**US. NIOSH: Pocket Guide to Chemical Hazards**

| Components                                               | Type    | Value                |
|----------------------------------------------------------|---------|----------------------|
| 2-methylpentane (CAS 107-83-5)                           | Ceiling | 1800 mg/m3           |
|                                                          |         | 510 ppm              |
|                                                          | TWA     | 350 mg/m3<br>100 ppm |
| methanol (CAS 67-56-1)                                   | STEL    | 325 mg/m3<br>250 ppm |
|                                                          | TWA     | 260 mg/m3<br>200 ppm |
|                                                          | TWA     | 400 mg/m3            |
| naphtha (petroleum), hydrotreated light (CAS 64742-49-0) |         | 100 ppm              |
|                                                          | TWA     | 180 mg/m3            |
|                                                          |         | 50 ppm               |

**Biological limit values**

**ACGIH Biological Exposure Indices**

| Components              | Value    | Determinant                         | Specimen | Sampling Time |
|-------------------------|----------|-------------------------------------|----------|---------------|
| methanol (CAS 67-56-1)  | 15 mg/l  | Methanol                            | Urine    | *             |
| n-hexane (CAS 110-54-3) | 0.5 mg/l | 2,5-Hexanedione, without hydrolysis | Urine    | *             |

\* - For sampling details, please see the source document.

**Exposure guidelines**

**US - California OELs: Skin designation**

methanol (CAS 67-56-1) Can be absorbed through the skin.  
n-hexane (CAS 110-54-3) Can be absorbed through the skin.

**US - Minnesota Haz Subs: Skin designation applies**

methanol (CAS 67-56-1) Skin designation applies.

**US - Tennessee OELs: Skin designation**

methanol (CAS 67-56-1) Can be absorbed through the skin.

**US ACGIH Threshold Limit Values: Skin designation**

methanol (CAS 67-56-1) Can be absorbed through the skin.  
n-hexane (CAS 110-54-3) Can be absorbed through the skin.

**US NIOSH Pocket Guide to Chemical Hazards: Skin designation**

methanol (CAS 67-56-1) Can be absorbed through the skin.

**Appropriate engineering controls**

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) 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.

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

**Eye/face protection** Wear safety glasses with side shields (or goggles).

**Skin protection**

**Hand protection** Wear protective gloves such as: Nitrile. Neoprene. Polyvinyl chloride (PVC).

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

**Respiratory protection**

If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary.

---

## 9. Physical and chemical properties

### Appearance

**Physical state** Liquid.

**Form** Liquid.

**Color** Colorless.

**Odor** Alcoholic.

**Odor threshold** Not available.

**pH** Not available.

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

**Initial boiling point and boiling range** 104.2 °F (40.1 °C) estimated

**Flash point** < 0 °F (< -17.8 °C)

**Evaporation rate** Very fast.

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

### Upper/lower flammability or explosive limits

**Flammability limit - lower (%)** 0.9 % estimated

**Flammability limit - upper (%)** 36 % estimated

**Vapor pressure** 355.7 hPa estimated

**Vapor density** > 1 (air = 1)

**Relative density** 0.74

### Solubility(ies)

**Solubility (water)** Negligible.

**Partition coefficient (n-octanol/water)** Not available.

**Auto-ignition temperature** 489.2 °F (254 °C) estimated

**Decomposition temperature** Not available.

**Viscosity** Not available.

**Percent volatile** 100 % estimated

---

## 10. Stability and reactivity

**Reactivity** The product is stable and non-reactive under normal conditions of use, storage and transport.

**Chemical stability** Material is stable under normal conditions.

**Possibility of hazardous reactions** No dangerous reaction known under conditions of normal use.

**Conditions to avoid** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. When exposed to extreme heat or hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as hydrogen fluoride. Contact with incompatible materials.

**Incompatible materials** Strong oxidizing agents.

**Hazardous decomposition products** Carbon oxides. Hydrogen fluoride. Formaldehyde.

---

## 11. Toxicological information

### Information on likely routes of exposure

**Inhalation** Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Prolonged inhalation may be harmful.

**Skin contact** Causes skin irritation.

**Eye contact** Causes eye irritation.

**Ingestion** Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

---

**Symptoms related to the physical, chemical and toxicological characteristics**

Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Fatigue. Nausea, vomiting. Very high exposure can cause suffocation from lack of oxygen. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves. Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Skin irritation. May cause redness and pain.

**Information on toxicological effects**

**Acute toxicity** May be fatal if swallowed and enters airways.

| <b>Components</b>                                                     | <b>Species</b>                                                                                                   | <b>Test Results</b> |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------------|
| 1,1,1,3,3-pentafluorobutane (CAS 406-58-6)                            |                                                                                                                  |                     |
| <b>Acute</b>                                                          |                                                                                                                  |                     |
| <b>Oral</b>                                                           |                                                                                                                  |                     |
| LD50                                                                  | Rat                                                                                                              | > 2000 mg/kg        |
| 2,2,4-trimethylpentane (CAS 540-84-1)                                 |                                                                                                                  |                     |
| <b>Acute</b>                                                          |                                                                                                                  |                     |
| <b>Inhalation</b>                                                     |                                                                                                                  |                     |
| LC50                                                                  | Rat                                                                                                              | 118 mg/l, 4 Hours   |
| methanol (CAS 67-56-1)                                                |                                                                                                                  |                     |
| <b>Acute</b>                                                          |                                                                                                                  |                     |
| <b>Dermal</b>                                                         |                                                                                                                  |                     |
| LD50                                                                  | Rabbit                                                                                                           | 12800 mg/kg         |
| <b>Oral</b>                                                           |                                                                                                                  |                     |
| LD50                                                                  | Rat                                                                                                              | 5628 mg/kg          |
| naphtha (petroleum), hydrotreated light (CAS 64742-49-0)              |                                                                                                                  |                     |
| <b>Acute</b>                                                          |                                                                                                                  |                     |
| <b>Dermal</b>                                                         |                                                                                                                  |                     |
| LD50                                                                  | Rabbit                                                                                                           | > 2000 mg/kg        |
| <b>Inhalation</b>                                                     |                                                                                                                  |                     |
| LC50                                                                  | Rat                                                                                                              | 61 mg/l, 4 Hours    |
| <b>Oral</b>                                                           |                                                                                                                  |                     |
| LD50                                                                  | Rat                                                                                                              | > 5000 mg/kg        |
| n-hexane (CAS 110-54-3)                                               |                                                                                                                  |                     |
| <b>Acute</b>                                                          |                                                                                                                  |                     |
| <b>Dermal</b>                                                         |                                                                                                                  |                     |
| LD50                                                                  | Rabbit                                                                                                           | > 1300 mg/kg        |
| <b>Oral</b>                                                           |                                                                                                                  |                     |
| LD50                                                                  | Rat                                                                                                              | 15840 mg/kg         |
| <b>Skin corrosion/irritation</b>                                      | Causes skin irritation.                                                                                          |                     |
| <b>Serious eye damage/eye irritation</b>                              | Causes eye irritation.                                                                                           |                     |
| <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>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)</b> |                                                                                                                  |                     |
| Not regulated.                                                        |                                                                                                                  |                     |
| <b>US. National Toxicology Program (NTP) Report on Carcinogens</b>    |                                                                                                                  |                     |
| Not listed.                                                           |                                                                                                                  |                     |
| <b>Reproductive toxicity</b>                                          | May damage fertility or the unborn child.                                                                        |                     |

|                                                           |                                               |
|-----------------------------------------------------------|-----------------------------------------------|
| <b>Specific target organ toxicity - single exposure</b>   | May cause drowsiness and dizziness.           |
| <b>Specific target organ toxicity - repeated exposure</b> | Not classified.                               |
| <b>Aspiration hazard</b>                                  | May be fatal if swallowed and enters airways. |
| <b>Chronic effects</b>                                    | Prolonged inhalation may be harmful.          |

## 12. Ecological information

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

| Product             | Species | Test Results |                                 |
|---------------------|---------|--------------|---------------------------------|
| QD® Contact Cleaner |         |              |                                 |
| <b>Aquatic</b>      |         |              |                                 |
| <i>Acute</i>        |         |              |                                 |
| Crustacea           | EC50    | Daphnia      | 1.7295 mg/l, 48 hours estimated |
| Fish                | LC50    | Fish         | 1.5589 mg/l, 96 hours estimated |

| Components                                 | Species | Test Results                                         |                                            |
|--------------------------------------------|---------|------------------------------------------------------|--------------------------------------------|
| 1,1,1,3,3-pentafluorobutane (CAS 406-58-6) |         |                                                      |                                            |
| <b>Aquatic</b>                             |         |                                                      |                                            |
| <i>Acute</i>                               |         |                                                      |                                            |
| Algae                                      | EC50    | Green algae (Selenastrum capricornutum)              | > 114 mg/l, 72 hours                       |
|                                            | NOEC    | Green algae (Selenastrum capricornutum)              | 13.2 mg/l, 72 hours                        |
| Crustacea                                  | EC50    | Water flea (Daphnia magna)                           | 980 mg/l, 48 hours<br>> 200 mg/l, 48 hours |
| Fish                                       | LC50    | Rainbow trout, donaldson trout (Oncorhynchus mykiss) | > 100 mg/l, 96 hours                       |
|                                            |         | Zebra danio (Danio rerio)                            | > 200 mg/l, 96 hours                       |
| <i>Chronic</i>                             |         |                                                      |                                            |
| Fish                                       | NOEC    | Fathead minnow (Pimephales promelas)                 | 38.2 mg/l, 30 days                         |

|                        |      |                                      |                        |
|------------------------|------|--------------------------------------|------------------------|
| methanol (CAS 67-56-1) |      |                                      |                        |
| <b>Aquatic</b>         |      |                                      |                        |
| Crustacea              | EC50 | Water flea (Daphnia magna)           | > 10000 mg/l, 48 hours |
| Fish                   | LC50 | Fathead minnow (Pimephales promelas) | > 100 mg/l, 96 hours   |

**Persistence and degradability** No data is available on the degradability of any ingredients in the mixture.

### Bioaccumulative potential

#### Partition coefficient n-octanol / water (log Kow)

|                             |       |
|-----------------------------|-------|
| 1,1,1,3,3-pentafluorobutane | 1.61  |
| 2,2,4-trimethylpentane      | 5.18  |
| 2-methylpentane             | 3.74  |
| methanol                    | -0.77 |
| n-hexane                    | 3.9   |

#### Bioconcentration factor (BCF)

|                                         |            |
|-----------------------------------------|------------|
| naphtha (petroleum), hydrotreated light | 10 - 25000 |
|-----------------------------------------|------------|

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 13. Disposal considerations

**Disposal instructions** If discarded, this product is considered a RCRA ignitable waste, D001. 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 in accordance with all applicable regulations.

**Hazardous waste code** D001: Waste Flammable material with a flash point <140 F



**Contaminated packaging**

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

---

**14. Transport information****DOT**

|                                     |                                                                            |
|-------------------------------------|----------------------------------------------------------------------------|
| <b>UN number</b>                    | UN1993                                                                     |
| <b>UN proper shipping name</b>      | Flammable liquids, n.o.s. (Isohexane, Pentafluorobutane), MARINE POLLUTANT |
| <b>Transport hazard class(es)</b>   |                                                                            |
| <b>Class</b>                        | 3                                                                          |
| <b>Subsidiary risk</b>              | -                                                                          |
| <b>Label(s)</b>                     | 3                                                                          |
| <b>Packing group</b>                | II                                                                         |
| <b>Environmental hazards</b>        |                                                                            |
| <b>Marine pollutant</b>             | Yes                                                                        |
| <b>Special precautions for user</b> | Read safety instructions, SDS and emergency procedures before handling.    |
| <b>Special provisions</b>           | IB2, T7, TP1, TP8, TP28                                                    |
| <b>Packaging exceptions</b>         | 150                                                                        |
| <b>Packaging non bulk</b>           | 202                                                                        |
| <b>Packaging bulk</b>               | 242                                                                        |

**IATA**

|                                     |                                                                         |
|-------------------------------------|-------------------------------------------------------------------------|
| <b>UN number</b>                    | UN1993                                                                  |
| <b>UN proper shipping name</b>      | Flammable liquid, n.o.s. (Isohexane, Pentafluorobutane)                 |
| <b>Transport hazard class(es)</b>   |                                                                         |
| <b>Class</b>                        | 3                                                                       |
| <b>Subsidiary risk</b>              | -                                                                       |
| <b>Packing group</b>                | II                                                                      |
| <b>ERG Code</b>                     | 3H                                                                      |
| <b>Special precautions for user</b> | Read safety instructions, SDS and emergency procedures before handling. |
| <b>Other information</b>            |                                                                         |
| <b>Passenger and cargo aircraft</b> | Allowed with restrictions.                                              |
| <b>Cargo aircraft only</b>          | Allowed with restrictions.                                              |

**IMDG**

|                                     |                                                                           |
|-------------------------------------|---------------------------------------------------------------------------|
| <b>UN number</b>                    | UN1993                                                                    |
| <b>UN proper shipping name</b>      | FLAMMABLE LIQUID, N.O.S. (Isohexane, Pentafluorobutane), MARINE POLLUTANT |
| <b>Transport hazard class(es)</b>   |                                                                           |
| <b>Class</b>                        | 3                                                                         |
| <b>Subsidiary risk</b>              | -                                                                         |
| <b>Packing group</b>                | II                                                                        |
| <b>Environmental hazards</b>        |                                                                           |
| <b>Marine pollutant</b>             | Yes                                                                       |
| <b>EmS</b>                          | F-E, S-E                                                                  |
| <b>Special precautions for user</b> | Read safety instructions, SDS and emergency procedures before handling.   |

**DOT**



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.

#### SARA 304 Emergency release notification

Not regulated.

#### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

#### US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

METHANOL (CAS 67-56-1)

N-HEXANE (CAS 110-54-3)

#### CERCLA Hazardous Substance List (40 CFR 302.4)

2,2,4-trimethylpentane (CAS 540-84-1) Listed.

methanol (CAS 67-56-1) Listed.

n-hexane (CAS 110-54-3) Listed.

n-pentane (CAS 109-66-0) Listed.

#### CERCLA Hazardous Substances: Reportable quantity

2,2,4-trimethylpentane (CAS 540-84-1) 1000 LBS

methanol (CAS 67-56-1) 5000 LBS

n-hexane (CAS 110-54-3) 5000 LBS

n-pentane (CAS 109-66-0) 100 LBS

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

### Other federal regulations

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

2,2,4-trimethylpentane (CAS 540-84-1)

methanol (CAS 67-56-1)

n-hexane (CAS 110-54-3)

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

n-pentane (CAS 109-66-0)

**Safe Drinking Water Act (SDWA)** Not regulated.

**Food and Drug Administration (FDA)** Not regulated.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Classified hazard categories** Flammable (gases, aerosols, liquids, or solids)  
 Skin corrosion or irritation  
 Serious eye damage or eye irritation  
 Reproductive toxicity  
 Specific target organ toxicity (single or repeated exposure)  
 Aspiration hazard  
 Simple asphyxiant  
 Hazard not otherwise classified (HNOC)

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 313 (TRI reporting)**

| Chemical name | CAS number | % by wt. |
|---------------|------------|----------|
| methanol      | 67-56-1    | < 1      |
| n-hexane      | 110-54-3   | 1 - 3    |

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

2,2,4-trimethylpentane (CAS 540-84-1)  
 2-methylpentane (CAS 107-83-5)  
 methanol (CAS 67-56-1)  
 naphtha (petroleum), hydrotreated light (CAS 64742-49-0)  
 n-hexane (CAS 110-54-3)

**US. Massachusetts RTK - Substance List**

2,2,4-trimethylpentane (CAS 540-84-1)  
 2-methylpentane (CAS 107-83-5)  
 methanol (CAS 67-56-1)  
 naphtha (petroleum), hydrotreated light (CAS 64742-49-0)  
 n-hexane (CAS 110-54-3)

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

2,2,4-trimethylpentane (CAS 540-84-1)  
 2-methylpentane (CAS 107-83-5)  
 methanol (CAS 67-56-1)  
 naphtha (petroleum), hydrotreated light (CAS 64742-49-0)  
 n-hexane (CAS 110-54-3)

**US. Rhode Island RTK**

2,2,4-trimethylpentane (CAS 540-84-1)  
 methanol (CAS 67-56-1)  
 naphtha (petroleum), hydrotreated light (CAS 64742-49-0)  
 n-hexane (CAS 110-54-3)

**California Proposition 65****WARNING:** Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)**California Proposition 65 - CRT: Listed date/Developmental toxin**

methanol (CAS 67-56-1) Listed: March 16, 2012

**California Proposition 65 - CRT: Listed date/Male reproductive toxin**

n-hexane (CAS 110-54-3) Listed: December 15, 2017

**US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))**

2,2,4-trimethylpentane (CAS 540-84-1)  
 methanol (CAS 67-56-1)  
 naphtha (petroleum), hydrotreated light (CAS 64742-49-0)  
 n-hexane (CAS 110-54-3)

**Volatile organic compounds (VOC) regulations****EPA****VOC content (40 CFR 51.100(s))** 74.9 %**Consumer products (40 CFR 59, Subpt. C)** Not regulated

**State**

|                          |                                                                                                                                                                    |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Consumer products</b> | This product is regulated as an Electronic Cleaner. This product is not compliant to be sold for use in California. This product is compliant in all other states. |
| <b>VOC content (CA)</b>  | 100 %                                                                                                                                                              |
| <b>VOC content (OTC)</b> | 74.9 %                                                                                                                                                             |

**International Inventories**

| <b>Country(s) or region</b> | <b>Inventory name</b>                                                  | <b>On inventory (yes/no)*</b> |
|-----------------------------|------------------------------------------------------------------------|-------------------------------|
| 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) | Yes                           |
| Europe                      | European List of Notified Chemical Substances (ELINCS)                 | No                            |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)               | No                            |
| Korea                       | Existing Chemicals List (ECL)                                          | Yes                           |
| New Zealand                 | New Zealand Inventory                                                  | No                            |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | No                            |
| Taiwan                      | Taiwan Chemical Substance Inventory (TCSI)                             | Yes                           |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                          | Yes                           |

\*A "Yes" indicates that all components of this product comply 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**

|                            |                   |
|----------------------------|-------------------|
| <b>Issue date</b>          | 07-11-2014        |
| <b>Revision date</b>       | 11-27-2018        |
| <b>Prepared by</b>         | Allison Yoon      |
| <b>Version #</b>           | 02                |
| <b>Further information</b> | CRC # 844/1002820 |

**Disclaimer** The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC's knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries, Inc..

**Revision information** This document has undergone significant changes and should be reviewed in its entirety.