# Safety Data Sheet Carbon Anode Solution

Version: 1.3
Revision date: 05/01/2019
Supersedes: 07/26/2018

## 1. PRODUCT AND COMPANY IDENTIFICATION

### 1.1. Product Identifiers

**Substance Name:** Carbon Anode Solution
**CAS No.**: NA
**Product Code:** UIC, Inc. Catalog Number CM300-002

### 1.2. Intended Use of the Product

**Use of the substance/mixture:**
**Name, Address, and Telephone of the Responsible Party**

UIC Inc
16720 Cherry Creek Court
Joliet, IL 60433
Phone: (815) 744-4477
Fax: (815) 744-1561

**Emergency Telephone Number**

For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call emergency number: 1-815-474-8753

## 2. Hazards Identification of the product

### 2.1. Classification of the substance or mixture

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Flammable liquids (Category 4), H227
Acute toxicity, Oral (Category 4), H302
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 2.2. GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

**Hazard statement(s)**

H227 Combustible liquid.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

**Precautionary statement(s)**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 Specific treatment (see supplemental first aid instructions on this label).
P330 Rinse mouth.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P235 Store in a well-ventilated place. Keep cool.
P501 Dispose of contents/ container to an approved waste disposal plant.

**2.3. Hazards not otherwise classified (HNOC) or not covered by GHS –** none

## 3. Composition/information on ingredients

### 3.1. Substances

Chemical name: Dimethyl sulfoxide
Synonyms: DMSO, Methyl sulfoxide
Formula: $C_2H_6OS$
Molecular weight: 78.13 g/mol
CAS-No.: 67-68-5
EC-No.: 200-664-3

Chemical name: Potassium Iodide
Formula: KI
Molecular weight: 166.00 g/mol
CAS-No.: 7681-11-0
EC-No.: 231-659-4

**Hazardous components**

| Component | Classification | Concentration |
|---|---|---|
| Dimethyl sulfoxide | Flam. Liq. 4; H227 | >75 % |
| Potassium Iodide | Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; H302, H315, H319 | 1-10 % |

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. First Aid Measures

### 4.1. Description of first aid measures

**General advice**
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
**If inhaled**
Remove to fresh air immediately. If breathing has stopped, perform artificial respiration. If breathing is difficult, have qualified medical personnel administer oxygen, keep person warm and get medical attention.
**In case of skin contact**
Remove contaminated clothing and wash before reuse. Flush skin with water for 15-20 minutes to remove all chemicals. Get immediate medical attention.
**In case of eye contact**
Flush eyes immediately with large amounts of water for 15-20 minutes, lifting upper and lower eyelids to remove all chemicals. Get immediate medical attention.
**If swallowed**
Do not induce vomiting. Get immediate medical attention. Maintain airway and respiration. If vomiting occurs, keep head lower than hips to prevent aspiration.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**4.3 Indication of any immediate medical attention and special treatment needed**
No data available

## 5. Fire Fighting Measures

**5.1. Extinguishing media**
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**5.2. Special hazards arising from the substance or mixture**
Carbon oxides, Sulfur oxides, Hydrogen iodide, Potassium oxides

**5.3. Advice for firefighters**
Wear self-contained breathing apparatus for firefighting if necessary

**5.4. Further information**
Use water spray to cool unopened containers.

## 6. Accidental Release Measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Immediately contact environmental supervisor. Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Ensure adequate ventilation. Avoid breathing dust.
For personal protection see section 8.

**6.2. Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**6.3. Methods and materials for containment and cleaning up**
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

**6.4. Reference to other sections**
For disposal see section 13.

## 7. Handling and Storage

**7.1 Precautions for safe handling**
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Avoid formation of dust and aerosols.
Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**
Keep container tightly closed in a cool, dry and well-ventilated place. Air, light, and moisture sensitive. Store under inert gas.
Hygroscopic
Storage class (TRGS 510): Combustible liquids.

**7.3 Specific end use(s)**
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## 8. Exposure Controls and Personal Protection

### 8.1. Control Parameters

**Components with workplace control parameters**

| Component | CAS-No. | Value | Control parameters | Basis |
|---|---|---|---|---|
| Dimethyl sulfoxide | 67-68-5 | TWA | 250.000000 ppm | USA. Workplace Environmental Exposure Levels (WEEL) |
| Potassium Iodide | 7681-11-0 | TWA | 0.010000 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| | Remarks | Upper Respiratory Tract irritation Hypothyroidism Not classifiable as a human carcinogen varies | | |
| | | TWA | 0.010000 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| | | Upper Respiratory Tract irritation Hypothyroidism Not classifiable as a human carcinogen varies | | |

### 8.2. Exposure Controls

**Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

**Personal protective equipment**

**Eye/face protection**

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nature latex/chloroprene
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Lapren® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.2 mm
Break through time: 38 min
Material tested: Dermatril® P (KCL 743 / Aldrich Z677388, Size M)
Data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Specific respirator selection based on contamination levels in the workplace with the levels not exceeding the working limit of the respirator. Must be jointly approved by NIOSH-MSHA.

**Control of environmental exposure**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**9. Physical and Chemical Properties**

**9.1 Information on basic physical and chemical properties**

| | | |
|---|---|---|
| a) | Appearance | Form: liquid |
| b) | Color | Clear or light yellow. |
| c) | Odor | Mild ripe olive, vegetable odor. |
| d) | Odor Threshold | No data available |
| e) | pH | No data available |
| f) | Melting point/freezing point | No data available |
| g) | Initial boiling point and boiling range | 370°F |
| h) | Flash point | 190°F (CC) |
| i) | Evaporation rate | 4.3 (CCl4 = 1) |
| j) | Flammability (solid, gas) | No data available |
| k) | Upper/lower flammability or explosive limits | No data available |
| l) | Vapor pressure | 0.46 mm Hg @ 20°C |
| m) | Vapor density | 2.70 - (Air = 1.0) |
| n) | Relative density | No data available |
| o) | Water solubility | Miscible |
| p) | Partition coefficient: n-octanol/water | No data available |
| q) | Auto-ignition temperature | 572°F |
| r) | Decomposition temperature | No data available |
| s) | Viscosity | No data available |
| t) | Specific gravity | 1.1 |
| u) | Explosive properties | Not explosive |
| v) | Oxidizing properties | the substance or mixture is not classified as oxidizing. |
| w) | % volatile | Non-volatile |

**9.2 Other safety information**

| | |
|---|---|
| Softening point | No information available |
| VOC content (%) | No information available |

## 10. Stability and Reactivity

**10.1 Reactivity**

No data available

**10.2 Chemical stability**

Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions**

No data available

**10.4 Conditions to avoid**

No data available

**10.5 Incompatible materials**

Strong oxidizing agents, acids, alkali metals, and carbon dioxide.

**10.6 Hazardous decomposition products**

Emits toxic oxides of carbon, iodine, or iodide compounds when heated to decomposition. May produce formaldehyde and methyl mercaptan.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

| | Dimethyl sulfoxide | Potassium Iodide |
|---|---|---|
| **Acute toxicity** | LD50 Oral - Rat -14,500 mg/kg<br>LD50 Dermal - Rabbit -> 5,000 mg/kg<br>LC50 Inhalation - Rat - 4 h - 40250 ppm<br>No data available | LD50 Oral - Mouse - 1,000 mg/kg<br>Inhalation: No data available<br>Dermal: No data available<br>No data available |
| **Skin corrosion/irritation** | No data available | Skin - Rabbit<br>Result: Irritating to skin. |
| **Serious eye damage/eye irritation** | No data available | Eyes - Rabbit Result: Irritating to eyes.<br>- 24 h (Draize Test) |
| **Respiratory or skin sensitization** | No data available | Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals |
| **Germ cell mutagenicity** | Mouse<br>Lymphocyte<br>Cytogenetic analysis<br>Mouse<br>Lymphocyte<br>Mutation in mammalian somatic cells<br>Rat<br>Cytogenetic analysis<br>Mouse<br>DNA damage | No data available |
| **Carcinogenicity** | Carcinogenicity - Rat– Oral<br>Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages: Other: Tumors.<br>Carcinogenicity - Mouse– Oral<br>Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Leukemia Skin and Appendages: Other: Tumors.<br><br>ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. | |

| | | |
|---|---|---|
| | IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.<br><br>NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.<br><br>OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. | IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.<br><br>NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.<br><br>OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. |
| **Reproductive toxicity** | Reproductive toxicity - Rat – Intraperitoneal<br><br>Effects on Fertility: Abortion.<br>Reproductive toxicity - Rat – Intraperitoneal<br>Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).<br>Reproductive toxicity - Rat – Subcutaneous<br>Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).<br>Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).<br>Reproductive toxicity - Mouse – Oral<br>Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). | Exposure to excessive amounts of iodine during pregnancy is capable of producing fetal hypothyroidism. Iodine-containing drugs have been associated with fetal goiter.<br>No data available |

| | | |
|---|---|---|
| | Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system. | |
| | Developmental Toxicity - Mouse – Intraperitoneal<br>Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system. | |
| **Specific target organ toxicity - single exposure** | No data available | No data available |
| **Specific target organ toxicity - repeated exposure** | No data available | No data available |
| **Aspiration hazard** | No data available | No data available |
| **Additional Information** | RTECS: PV6210000<br>Effects due to ingestion may include: Nausea, Fatigue, Headache<br>To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.<br>Eyes - Eye disease -<br>Based on Human Evidence<br>Eyes - Eye disease -<br>Based on Human Evidence | RTECS: TT2975000<br>Prolonged exposure to iodides may produce iodism in sensitive individuals. Symptoms of exposure include: skin rash, running nose, headache and irritation of the mucous membrane. For severe cases the skin may show pimples, boils, hives, blisters and black and blue spots. Iodides are readily diffused across the placenta. Neonatal deaths from respiratory distress secondary to goiter have been reported. Iodides have been known to cause drug-induced fevers, which are usually of short duration.<br>Liver - Irregularities -<br>Based on Human Evidence<br>Liver - Irregularities -<br>Based on Human Evidence |

## 12. Ecological Information

This product has not been studied as a mixture.

| Dimethyl sulfoxide | Potassium Iodide |
|---|---|
| **12.1. Toxicity** | |
| Toxicity to fish LC50 - *Pimephales promelas* (fathead minnow) - 34,000 mg/l - 96 h LC50 - Oncorhynchus mykiss (rainbow trout) - 35,000 mg/l - 96 h | Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 2,190 mg/l - 96 h |
| Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 24,600 mg/l - 48 h (OECD Test Guideline 202) | Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia (water flea) - 2.7 mg/l - 24 h |
| Toxicity to algae EC50 - *Pseudokirchneriella subcapitata* (green algae) - 17,000 mg/l - 72 h (OECD Test Guideline 201) | |
| **12.2 Persistence and degradability** | |
| Biodegradability Result: 31 % - According to the results of tests of biodegradability this product is not readily biodegradable. (OECD Test Guideline 301D) | No data available |
| **12.3 Bioaccumulative potential** | |
| No data available | No data available |
| **12.4 Mobility in soil** | |
| No data available | No data available |
| **12.5 Results of PBT and vPvB assessment** | |
| PBT/vPvB assessment not available as chemical safety assessment not required/not conducted | PBT/vPvB assessment not available as chemical safety assessment not required/not conducted |
| **12.6 Other adverse effects** | **12.6 Other adverse effects** |
| No data available<br>Stability in water - 0.12 - 1.2 h at 30 °C<br>Remarks: Hydrolyses readily | No data available |

## 13. Disposal Considerations

### 13.1 Waste treatment methods

**Product**

Contain spill with absorbent, do not allow material to enter streams or waterways. Place in a clean, dry container for disposal in an approved waste facility according to Federal, State and local regulations.

**Contaminated packaging**

Dispose of as unused product

## 14. Transport Information

**DOT (US)**
Not regulated

**IMDG**
Not regulated

**IATA**
Not regulated

## 15. Regulatory Information

**SARA 302 Components**
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313

**SARA 311/312 Hazards**
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right to Know Components**
No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right to Know Components**

| | CAS-No. | Revision Date |
|---|---|---|
| Dimethyl sulfoxide | 67-68-5 | 2007-03-01 |
| Potassium iodide | 7681-11-0 | |

**New Jersey Right to Know Components**

| | CAS-No. | Revision Date |
|---|---|---|
| Dimethyl sulfoxide | 67-68-5 | 2007-03-01 |
| Potassium iodide | 7681-11-0 | |

**California Prop. 65 Components**
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

## 16. Other Information

**Full text of H-Statements referred to under sections 2 and 3.**
**Dimethyl sulfoxide**
Flam. Liq. -Flammable liquids
H227 Combustible liquid
**Potassium iodide**
Acute Tox. -Acute toxicity
Eye Irrit. -Eye irritation
H302 Harmful if swallowed
H315 Causes skin irritation
H319 Causes serious eye irritation
Skin Irrit. -Skin irritation

**HMIS Rating**
**Dimethyl sulfoxide**
Health hazard: 0
Chronic Health Hazard: *
Flammability: 2
Physical Hazard 0
**Potassium iodide**
Health hazard: 2
Chronic Health Hazard: *
Flammability: 0
Physical Hazard 0
**NFPA Rating**
**Dimethyl sulfoxide**
Health hazard: 0
Fire Hazard: 2
Reactivity Hazard: 0
**Potassium iodide**
Health hazard: 2
Fire Hazard: 0
Reactivity Hazard: 0

## Label Hazard Warning:

WARNING! HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. COMBUSTIBLE LIQUID AND VAPOR.

**Product Use:** Laboratory Reagent

**Further information**

UIC, Inc. has obtained the most current chemical information available to us in updating this Safety Data Sheet. However, users should always use caution when working with chemicals, as UIC, Inc. assumes no liability resulting from its use. Additionally, we make no warranty with respect to any information published on this sheet, either stated or implied.

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