

### Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Date of issue: 26/04/2017 Revision date: 05/06/2018 Supersedes: 26/04/2017 Version: 1.1 ECN-5261-A

| SECTION 1:   | Identification of the subs                       | stance/mixture and of the company/undertaking                    |
|--|--|--|
|  | ct identifier                                    |  |
| Product form   |  | : Mixtures   |
| Product name   |  | : 1,2,3,5,6,7-HEXACN (PCN-67) (13C10, 98%) 10 UG/ML IN ISOOCTANE |
| Product code   |  | : ECN-5261-A   |
| 1.2. Releva  | nt identified uses of the subst                  | ance or mixture and uses advised against                         |
| 1.2.1. Releva  | int identified uses                              |  |
| Main use catego  | У  | : Professional use   |
| Industrial/Profess   | sional use spec                                  | : For professional use only                                      |
| 1.2.2. Uses a  | dvised against                                   |  |
| No additional info   | ormation available                               |  |
|  | s of the supplier of the safety d                | ata sheet  |
| Cambridge Isoto<br>50 Frontage Roa<br>Andover, MA 01<br>USA                  |  |  |
| cilsales@isotope   | ·  |  |
|  | ency telephone number                            |  |
| Emergency num  |  |  |
|  | )-424-9300 (24 hours)<br>703-741-5970 (24 hours) |  |
| SECTION 2:   | Hazards identification                           |  |
| 2.1. Classi  | fication of the substance or mi                  | xture  |
| Classification a   | ccording to Regulation (EC) No                   | D. 1272/2008 [CLP]   |
| Flam. Liq. 2   | H225   |  |
| Skin Irrit. 2  | H315   |  |
| STOT SE 3  | H336   |  |
| Asp. Tox. 1  | H304   |  |
| Aquatic Acute 1  | H400   |  |
| Aquatic Chronic  |  |  |
| Full text of hazar   | d classes and H-statements : see                 | e section 16   |
| Xi; R38<br>N; R50/53   | ccording to Directive 67/548/EI                  | EC [DSD] or 1999/45/EC [DPD]                                     |
| R67<br>F; R11<br>Xp: B65   |  |  |
| Xn; R65<br>Full text of R-phr  | ases: see section 16                             |  |
|  | - ction  |  |
| GHS-US classifi  |  |  |
| Flam. Liq. 2<br>Skin Irrit. 2<br>STOT SE 3<br>Asp. Tox. 1<br>Aquatic Acute 1 | H225<br>H315<br>H336<br>H304<br>H400             |  |
| Aquatic Acute 1  |  |  |

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects Liver, Kidney.

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| 2.2. Label elements                          |   |
|--|---|
| Labeling according to Regulation (EC) No     | o. 1272/2008 [CLP]  |
| Hazard pictograms (CLP)                      |   |
|  |   |
| Signal word (CLD)                            | GHS02 GHS08 GHS07 GHS09   |
| Signal word (CLP)<br>Hazard statements (CLP) | : Danger<br>: H225 - Highly flammable liquid and vapor  |
|  | H304 - May be fatal if swallowed and enters airways<br>H315 - Causes skin irritation<br>H336 - May cause drowsiness or dizziness<br>H410 - Very toxic to aquatic life with long lasting effects   |
| Precautionary statements (CLP)               | <ul> <li>P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking</li> <li>P233 - Keep container tightly closed</li> <li>P240 - Ground/bond container and receiving equipment</li> <li>P241 - Use explosion-proof ventilating, lighting, electrical equipment</li> <li>P261 - Avoid breathing vapors, spray, mist, gas, fume, dust</li> <li>P264 - Wash hands, forearms and face thoroughly after handling</li> <li>P271 - Use only outdoors or in a well-ventilated area</li> <li>P273 - Avoid release to the environment</li> </ul>   |
| GHS-US labeling                              |   |
| Hazard pictograms (GHS-US)                   |   |
| Signal word (GHS-US)                         | GHS02 GHS08 GHS07 GHS09<br>: Danger   |
| Hazard statements (GHS-US)                   | <ul> <li>H225 - Highly flammable liquid and vapor</li> <li>H304 - May be fatal if swallowed and enters airways</li> <li>H315 - Causes skin irritation</li> <li>H336 - May cause drowsiness or dizziness</li> <li>H410 - Very toxic to aquatic life with long lasting effects</li> </ul>   |
| Precautionary statements (GHS-US)            | <ul> <li>P210 - Keep away from sparks, open flames, hot surfaces, heat No smoking<br/>P233 - Keep container tightly closed<br/>P240 - Ground/Bond container and receiving equipment<br/>P241 - Use explosion-proof electrical, lighting, ventilating equipment<br/>P242 - Use only non-sparking tools<br/>P243 - Take precautionary measures against static discharge<br/>P261 - Avoid breathing mist, spray, vapors, gas, fume, dust<br/>P264 - Wash hands, forearms and face thoroughly after handling<br/>P271 - Use only outdoors or in a well-ventilated area<br/>P273 - Avoid release to the environment<br/>P280 - Wear protective gloves, protective clothing, eye protection, face protection<br/>P301+P310 - If swallowed: Immediately call a doctor<br/>P302+P352 - If on skin: Wash with plenty of water<br/>P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse<br/>skin with water/shower</li> <li>P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing<br/>P312 - Call a doctor if you feel unwell</li> <li>P321 - Specific treatment (see Hazard pictograms (CLP) on this label)</li> <li>P331 - Do NOT induce vomiting</li> <li>P332+P313 - If skin irritation occurs: Get medical advice/attention</li> <li>P362+P364 - Take off icontaminated clothing and wash it before reuse</li> <li>P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO2), dry<br/>extinguishing powder to extinguish</li> <li>P391 - Collect spillage</li> <li>P403+P235 - Store in a well-ventilated place. Keep container tightly closed</li> <li>P403+P235 - Store in a well-ventilated place. Keep cool</li> <li>P405 - Store locked up</li> </ul> |

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#### 2.3. **Other hazards**

### No additional information available

### SECTION 3: Composition/Information on ingredients

#### 3.1. **Substances**

Not applicable Mix

| .2. Mixtures                    |   |         |  |
|---------------------------------|---|---------|--|
| Name                            | Product identifier  | %       | Classification according to<br>Directive 67/548/EEC  |
| ISOOCTANE UNLABELED             | (CAS No) 540-84-1<br>(EC No) 208-759-1<br>(EC Index No) 601-009-00-8<br>(REACH-no) 01-2119457965-22 | 99.9986 | Xi; R38<br>N; R50/53<br>R67<br>F; R11<br>Xn; R65   |
| 1,2,3,5,6,7-HEXACN (13C10, 98%) | (CAS No) 103426-97-7 (Unlabeled)<br>(EC No) 215-320-8<br>(EC Index No) 602-041-00-5                 | 0.0014  | Xn; R20/21<br>Xi; R36/37/38<br>N; R50/53   |
| Name                            | Product identifier  | %       | Classification according to<br>Regulation (EC) No.<br>1272/2008 [CLP]  |
| ISOOCTANE UNLABELED             | (CAS No) 540-84-1<br>(EC No) 208-759-1<br>(EC Index No) 601-009-00-8<br>(REACH-no) 01-2119457965-22 | 99.9986 | Flam. Liq. 2, H225<br>Skin Irrit. 2, H315<br>STOT SE 3, H336<br>Asp. Tox. 1, H304<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410                          |
| 1,2,3,5,6,7-HEXACN (13C10, 98%) | (CAS No) 103426-97-7 (Unlabeled)<br>(EC No) 215-320-8<br>(EC Index No) 602-041-00-5                 | 0.0014  | Acute Tox. 4 (Oral), H302<br>Skin Irrit. 2, H315<br>Eye Dam. 1, H318<br>STOT RE 1, H372<br>STOT RE 2, H373<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410 |
| Name                            | Product identifier  | %       | GHS-US classification  |
| ISOOCTANE UNLABELED             | (CAS No) 540-84-1   | 99.9986 | Flam. Liq. 2, H225<br>Skin Irrit. 2, H315<br>STOT SE 3, H336<br>Asp. Tox. 1, H304<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410                          |

### Full text of R- and H- phrases: see section 16

| SECTION 4: First aid measures            |   |
|--|---|
| 4.1. Description of first aid measures   |   |
| First-aid measures general :             | If you feel unwell, seek medical advice.  |
| First-aid measures after inhalation      | Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration.                                 |
| First-aid measures after skin contact    | Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention. |
| First-aid measures after eye contact     | Rinse eyes with water as a precaution.  |
| First-aid measures after ingestion       | Never give anything by mouth to an unconscious person. Do not induce vomiting. Call a physician immediately.                                  |
| 4.2. Most important symptoms and effects | , both acute and delayed  |
| Symptoms/injuries :                      | May cause drowsiness or dizziness.  |
| Symptoms/injuries after inhalation :     | May be fatal if swallowed and enters airways.   |
| Symptoms/injuries after skin contact     | Causes skin irritation. May be harmful in contact with skin.  |
| Symptoms/injuries after eye contact      | May cause severe irritation.  |
| Symptoms/injuries after ingestion :      | May be fatal if swallowed and enters airways. Risk of lung edema.   |

Indication of any immediate medical attention and special treatment needed 4.3.

Treat symptomatically.

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|-------------------------------------|---|---|
| <b>SECTION 5: Firefighting</b>      | measures  |   |
| 5.1. Extinguishing media            |   |   |
| Suitable extinguishing media        | : Water spray. Dry powder. For  | am. Carbon dioxide. Flood fire area with water from a distance.   |
| 5.2. Special hazards aris           | ing from the substance or mixture   |   |
| Fire hazard                         | : Extremely flammable liquid a  | nd vapor.   |
| Explosion hazard                    | : May form flammable/explosiv   | e vapor-air mixture.  |
| Reactivity                          | : vapors may form flammable r   | nixture with air. Highly flammable liquid and vapor.  |
| 5.3. Advice for firefighter         | S   |   |
| Firefighting instructions           | : Wear a self contained breathing   | ing apparatus.  |
| Protection during firefighting      |   | proper protective equipment, including respiratory protection. Do hout suitable protective equipment. Self-contained breathing ve clothing.   |
| SECTION 6: Accidental               | release measures  |   |
| 6.1. Personal precaution            | s, protective equipment and emergency procee  | dures   |
| 6.1.1. For non-emergency            | personnel   |   |
| Emergency procedures                | mist, gas. Avoid contact with   | ben flames, no sparks, and no smoking. Avoid breathing vapors,<br>skin and eyes. Use personal protective equipment as required.<br>n. Ensure adequate air ventilation. Provide adequate ventilation to<br>oncentrations.  |
| 6.1.2. For emergency resp           | onders  |   |
| Protective equipment                | : Do not attempt to take action refer to section 8: "Exposure   | without suitable protective equipment. For further information controls/personal protection".   |
| 6.2. Environmental preca            | utions  |   |
| Stop leak, if possible without risl | k. Prevent entry to sewers and public waters. Avoi  | d release to the environment.   |
| 6.3. Methods and materia            | al for containment and cleaning up  |   |
| For containment                     | : Collect spillage. Vacuum with   | an equipment that avoids ignition risk. This material and its fin a safe way, and as per local legislation.   |
| Methods for cleaning up             |   | bent material. Notify authorities if product enters sewers or public  |
| 6.4. Reference to other s           | ections   |   |
| No additional information availal   | ole   |   |
| <b>SECTION 7: Handling ar</b>       | d storage   |   |
| 7.1. Precautions for safe           |   |   |
| Additional hazards when proces      | •   | ves or clothing   |
| Precautions for safe handling       | : Keep away from heat, hot su<br>smoking. Ground/bond conta<br>precautionary measures agai<br>container. Use explosion-prod | rfaces, sparks, open flames and other ignition sources. No<br>iner and receiving equipment. Use only non-sparking tools. Take<br>nst static discharge. Flammable vapors may accumulate in the<br>of equipment. Wear personal protective equipment. Use only<br>ed area. Avoid breathing dust, fume, gas, mist, spray, vapors. |
| Hygiene measures                    | : Handle in accordance with go<br>breaks and at the end of work   | bod industrial hygiene and safety practice. Wash hands before kday. Wash contaminated clothing before reuse. Do not eat, drink buduct. Always wash hands after handling the product.  |
| 7.2. Conditions for safe s          | storage, including any incompatibilities  |   |
| Technical measures                  |   | eceiving equipment. Keep dry. Store in tightly closed, leak-proof are opened should be properly resealed and kept upright to  |
| Storage conditions                  | : Store at room temperature av  | vay from light and moisture.  |
| Incompatible materials              | : Heat sources.   |   |
| 7.3. Specific end use(s)            |   |   |
| No additional information availal   | ble   |   |
| SECTION 8. Exposure c               | ontrols/personal protection   |   |
| 8.1. Control parameters             |   |   |
|                                     |   |   |
| Italy - Portugal - USA ACGIH        | ) (13C10, 98%) 10 UG/ML IN ISOOCTANE<br>ACGIH TWA (ppm)   | 300.00000000 ppm Basis: USA. ACGIH Threshold<br>Limit Values (TLV)  |
|                                     |   |   |

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| 1,2,3,5,6,7-HEXACN (PCN-67      | ) (13C10, 98%) 10 UG/ML IN ISOOCTANE |   |
|---------------------------------|--------------------------------------|---|
| Italy - Portugal - USA ACGIH    | Remark (ACGIH)                       | Upper Respiratory Tract irritation  |
| ISOOCTANE UNLABELED (5          | 540-84-1)                            |   |
| Italy - Portugal - USA ACGIH    | ACGIH TWA (ppm)                      | 300.00000000 ppm Basis: USA. ACGIH Threshold<br>Limit Values (TLV)  |
| Italy - Portugal - USA ACGIH    | Remark (ACGIH)                       | Upper Respiratory Tract irritation  |
| 8.2. Exposure controls          |                                      |   |
| Appropriate engineering control |                                      | d areas with mild soap and water before eating, drinking or k. Ensure good ventilation of the work station. |
| Personal protective equipment   | : Gloves. Protective goggles. Pro    | ptective clothing. Self-contained breathing apparatus.  |

| : Wear suitable protective clothing and gloves.  |
|--|
| : Wear suitable protective clothing and gloves.  |
| : Wear eye protection. Chemical goggles or face shield with safety glasses. Safety glasses.        |
| : Wear suitable protective clothing, gloves and eye/face protection.                               |
| : In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator. |
| : Avoid release to the environment.  |
|  |

### **SECTION 9: Physical and chemical properties**

9.1. Information on basic physical and chemical properties

| The properties listed below are for the solvent, the main compo | onent of this mixture.  |
|---|---|
| Physical state  | : Liquid  |
| Appearance  | : Liquid  |
| Molecular mass  | : 114.23 g/mol  |
| Color   | : Colorless   |
| Odor  | : No data available   |
| Odor threshold  | : No data available   |
| pH  | : No data available   |
| Relative evaporation rate (butyl acetate=1)                     | : No data available   |
| Melting point   | : -107 °C (-161 °F)   |
| Freezing point  | : No data available   |
| Boiling point   | : 98 - 99 °C (208 - 210 °F) at 1,013 hPa (760 mmHg)                           |
| Flash point   | : -12 °C (10 °F) - closed cup   |
| Auto-ignition temperature                                       | : No data available   |
| Decomposition temperature                                       | : No data available   |
| Flammability (solid, gas)                                       | : Not applicable  |
| Vapor pressure  | : 55 hPa (41 mmHg) at 21 °C (70 °F); 117 hPa (88 mmHg) at 37.8 °C (100.04 °F) |
| Relative vapor density at 20 °C                                 | : 3.94 - (Air = 1.0)  |
| Relative density  | : No data available   |
| Specific gravity / density                                      | : 0.69 g/ml at 20 °C (68 °F)  |
| Solubility  | : Water: insoluble  |
| Log Pow   | : 4.6   |
| Log Kow   | : No data available   |
| Viscosity, kinematic  | : No data available   |
| Viscosity, dynamic  | : No data available   |
| Explosive properties  | : No data available   |
| Oxidizing properties  | : No data available   |
| Explosion limits  | : 1 - 6 % (V)   |
| 0.2 Other information   |   |

9.2. Other information

No additional information available

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| 26, 2012 / Rules and Regulations                       |  |
|--|--|
| SECTION 10: Stability and reactivity                   |  |
| 10.1. Reactivity                                       |  |
| Vapors may form flammable mixture with air. Hig        | hlv flammable liquid and vapor.  |
| 10.2. Chemical stability                               |  |
| See storage and expiration date on CoA.                |  |
|  |  |
| 10.3. Possibility of hazardous reactions               |  |
| Vapors may form explosive mixture with air.            |  |
| 10.4. Conditions to avoid                              |  |
| Sparks. Heat. Direct sunlight. Overheating. Open       | flame.   |
| 10.5. Incompatible materials                           |  |
| Strong oxidizing agents.                               |  |
| 10.6. Hazardous decomposition products                 |  |
| Carbon oxides (CO, CO2).                               |  |
| SECTION 11: Toxicological informati                    | on   |
| 11.1. Information on toxicological effects             |  |
| Acute toxicity   | : Not classified   |
| 1,2,3,5,6,7-HEXACN (PCN-67) (13C10, 98%) 1             |  |
| LD50 oral rat  | > 5000 mg/kg (OECD Test Guideline 401)   |
| LD50 dermal rabbit                                     | > 2000 mg/kg (OECD Test Guideline 401) > 2000 mg/kg (OECD Test Guideline 402)  |
| LC50 inhalation rat (mg/l)                             | > 33.52 mg/l/4h (OECD Test Guideline 403)  |
| 1,2,3,5,6,7-HEXACN (13C10, 98%) (103426-97             |  |
| ATE CLP (oral)   | 500.000 mg/kg body weight  |
| ISOOCTANE UNLABELED (540-84-1)                         |  |
| LD50 oral rat  | > 5000 mg/kg (OECD Test Guideline 401)   |
| LD50 dermal rabbit                                     | > 2000 mg/kg (OECD Test Guideline 402)   |
| LC50 inhalation rat (mg/l)                             | > 33.52 mg/l/4h (OECD Test Guideline 403)  |
| Skin corrosion/irritation                              | : Skin. Rabbit. Result: Irritating to skin. (OECD 404 method)  |
| Serious eye damage/irritation                          | : Eyes. Rabbit. Result: No eye irritation. (OECD 405 method)   |
| Respiratory or skin sensitization                      | Not classified   |
| Germ cell mutagenicity                                 | : Rat - Unscheduled DNA synthesis  |
| Carcinogenicity  | : Not classified   |
| Reproductive toxicity                                  | : Not available  |
| Specific target organ toxicity – single exposure       | : May cause drowsiness or dizziness  |
| Specific target organ toxicity – repeated              | : Health hazard - Aspiration hazard  |
| exposure   | No data available  |
|  |  |
| Aspiration hazard                                      | Aspiration hazard  |
| Potential Adverse human health effects and<br>symptoms | : This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. Affects the liver. |
| Symptoms/injuries after inhalation                     | : May be fatal if swallowed and enters airways.  |
| Symptoms/injuries after skin contact                   | : Causes skin irritation. May be harmful in contact with skin.   |
| Symptoms/injuries after eye contact                    | : May cause severe irritation.   |
| Symptoms/injuries after ingestion                      | : May be fatal if swallowed and enters airways. Risk of lung edema.  |
|  |  |

| <b>SECTION 12: Ecological information</b> |   |
|---|---|
| 12.1. Toxicity                            |   |
| Ecology - water                           | : Very toxic to aquatic life with long lasting effects. |
|   |   |

| 12.2. Persistence and degradability                       |   |
|---|---|
| 1,2,3,5,6,7-HEXACN (PCN-67) (13C10, 98%) 10               | UG/ML IN ISOOCTANE                                      |
| Persistence and degradability                             | May cause long-term adverse effects in the environment. |
| 1,2,3,5,6,7-HEXACN (13C10, 98%) (103426-97-7 (Unlabeled)) |   |
| Persistence and degradability                             | No data available.                                      |
| 05/06/2018  | EN (English US) 6/10                                    |

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| 40.0 Discourse lating as for the  |   |
|---|---|
| 12.3. Bioaccumulative potential   |   |
| 1,2,3,5,6,7-HEXACN (PCN-67) (13C10, 98%) 1  |   |
| Log Pow   | 4.6   |
| 1,2,3,5,6,7-HEXACN (13C10, 98%) (103426-97  |   |
| Bioaccumulative potential   | No data available.  |
| ISOOCTANE UNLABELED (540-84-1)  |   |
| Log Pow   | 4.6   |
| 12.4. Mobility in soil  |   |
| 1,2,3,5,6,7-HEXACN (13C10, 98%) (103426-97  | 7-7 (Unlabeled))  |
| Ecology - soil  | No data available.  |
| 12.5. Results of PBT and vPvB assessme  | nt  |
| No additional information available   |   |
| 12.6. Other adverse effects   |   |
| Other adverse effects   | : Very toxic to aquatic life with long lasting effects. Avoid release to the environment. Disposal must be done according to official regulations.  |
|   |   |
| SECTION 13: Disposal consideration  |   |
| 13.1. Waste treatment methods   |   |
| Regional legislation (waste)  | : Waste materials should be disposed of under conditions which meet Federal, State, and Loca environmental control regulations.   |
| Product/Packaging disposal recommendations:   | : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.  |
| Ecology - waste materials   | : Dispose of as unused product.   |
| SECTION 14: Transport information   |   |
| In accordance with ADR / RID / IMDG / IATA / AD   | אר  |
| 14.1. UN number   |   |
| UN-No.(DOT)   | : 1262  |
| DOT NA no.  | UN1262  |
|   |   |
| 14.2. UN proper shipping name   |   |
|   |   |
| Proper Shipping Name (DOT)  | : Octanes   |
| Proper Shipping Name (DOT)<br>Class (DOT)   | : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120   |
| Proper Shipping Name (DOT)  |   |
| Proper Shipping Name (DOT)<br>Class (DOT)   | : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120   |
| Proper Shipping Name (DOT)<br>Class (DOT)<br>Hazard labels (DOT)<br>Packing group (DOT)   | <ul> <li>3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120</li> <li>3 - Flammable liquid</li> </ul>   |
| Proper Shipping Name (DOT)<br>Class (DOT)<br>Hazard labels (DOT)<br>Packing group (DOT)<br>DOT Special Provisions (49 CFR 172.102)<br>DOT Packaging Exceptions (49 CFR 173.xxx)   | <ul> <li>3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120</li> <li>3 - Flammable liquid</li> <li>3 - Flammable liquid</li> <li>11 - Medium Danger</li> <li>II - Medium Danger</li> <li>IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T4 - 2.65 178.274(d)(2) Normal 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / 1 + a (tr - tf) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.</li> <li>150</li> </ul>                       |
| Proper Shipping Name (DOT)<br>Class (DOT)<br>Hazard labels (DOT)<br>Packing group (DOT)<br>DOT Special Provisions (49 CFR 172.102)<br>DOT Packaging Exceptions (49 CFR 173.xxx)<br>DOT Packaging Non Bulk (49 CFR 173.xxx)  | <ul> <li>3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120</li> <li>3 - Flammable liquid</li> <li>3 - Flammable liquid</li> <li>11 - Medium Danger</li> <li>IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T4 - 2.65 178.274(d)(2) Normal</li></ul>   |
| Proper Shipping Name (DOT)<br>Class (DOT)<br>Hazard labels (DOT)<br>Packing group (DOT)<br>DOT Special Provisions (49 CFR 172.102)<br>DOT Packaging Exceptions (49 CFR 173.xxx)<br>DOT Packaging Non Bulk (49 CFR 173.xxx)  | <ul> <li>3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120</li> <li>3 - Flammable liquid</li> <li>3 - Flammable liquid</li> <li>11 - Medium Danger</li> <li>II - Medium Danger</li> <li>IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T4 - 2.65 178.274(d)(2) Normal 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / 1 + a (tr - tf) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.</li> <li>150</li> </ul>                       |
| Proper Shipping Name (DOT)<br>Class (DOT)<br>Hazard labels (DOT)<br>Packing group (DOT)<br>DOT Special Provisions (49 CFR 172.102)<br>DOT Packaging Exceptions (49 CFR 173.xxx)<br>DOT Packaging Non Bulk (49 CFR 173.xxx)<br>DOT Packaging Bulk (49 CFR 173.xxx)   | <ul> <li>3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120</li> <li>3 - Flammable liquid</li> <li>3 - Flammable liquid</li> <li>11 - Medium Danger</li> <li>II - Medium Danger</li> <li>IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T4 - 2.65 178.274(d)(2) Normal 178.275(d)(3)</li> <li>TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / 1 + a (tr - tf) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.</li> <li>150</li> <li>202</li> </ul> |
| Proper Shipping Name (DOT)<br>Class (DOT)<br>Hazard labels (DOT)<br>Packing group (DOT)<br>DOT Special Provisions (49 CFR 172.102)<br>DOT Packaging Exceptions (49 CFR 173.xxx)<br>DOT Packaging Non Bulk (49 CFR 173.xxx)<br>DOT Packaging Bulk (49 CFR 173.xxx)<br>HA3. Additional information  | <ul> <li>: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120</li> <li>: 3 - Flammable liquid</li> <li>i - Authonized liquid</li> <li>: II - Medium Danger</li> <li>: IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31H21). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T4 - 2.65 178.274(d)(2) Normal 178.275(d)(3)</li> <li>TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / 1 + a (tr - tf) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.</li> <li>: 150</li> <li>: 202</li> <li>: 242</li> </ul> |
| Proper Shipping Name (DOT)<br>Class (DOT)<br>Hazard labels (DOT)<br>Packing group (DOT)<br>DOT Special Provisions (49 CFR 172.102)<br>DOT Packaging Exceptions (49 CFR 173.xxx)<br>DOT Packaging Non Bulk (49 CFR 173.xxx)<br>DOT Packaging Bulk (49 CFR 173.xxx)<br>HA3. Additional information  | <ul> <li>3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120</li> <li>3 - Flammable liquid</li> <li>3 - Flammable liquid</li> <li>11 - Medium Danger</li> <li>IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T4 - 2.65 178.274(d)(2) Normal</li></ul>   |
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| Proper Shipping Name (DOT)<br>Class (DOT)<br>Hazard labels (DOT)<br>Packing group (DOT)<br>DOT Special Provisions (49 CFR 172.102)<br>DOT Packaging Exceptions (49 CFR 173.xxx)<br>DOT Packaging Non Bulk (49 CFR 173.xxx)<br>DOT Packaging Bulk (49 CFR 173.xxx)<br>DOT Packaging Bulk (49 CFR 173.xxx)<br><b>14.3.</b> Additional information<br>Emergency Response Guide (ERG) Number<br>Other information                       | <ul> <li>: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120</li> <li>: 3 - Flammable liquid</li> <li>: II - Medium Danger</li> <li>: IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31H21). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T4 - 2.65 178.274(d)(2) Normal</li></ul>   |
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| 26, 2012 / Rules and Regulations                             |   |
|--|---|
| Hazard identification number (Kemler No.)                    | : 33  |
| Classification code (ADR)                                    | : F1  |
| Hazard labels (ADR)  | : 3 - Flammable liquids   |
|  |   |
|  |   |
|  |   |
|  |   |
| Orange plates  | 33  |
|  | 33  |
|  | 1262  |
|  |   |
| Tunnel restriction code (ADR)                                | : D/E   |
| Limited quantities (ADR)                                     | 11  |
| EAC  | : 3YE   |
| Excepted quantities (ADR)                                    | : E2  |
|  |   |
| Transport by sea   |   |
| DOT Vessel Stowage Location                                  | : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a   |
|  | passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on |
|  | passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this  |
|  | section is exceeded.  |
| MFAG-No  | : 128   |
| Air transport  |   |
| DOT Quantity Limitations Passenger aircraft/rail             | : 5L  |
| (49 CFR 173.27)  |   |
| DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) | : 60 L  |
| Civil Aeronautics Law  | : Flammable liquids   |
|  |   |
| 14.4. Environmental hazards                                  |   |
| Dangerous for the environment                                | :   |
| 0  | XXX \   |
|  | $\langle \mathbf{I}_{2} \rangle$  |
|  |   |
| Other information  | : No supplementary information available.   |
|  |   |
| 14.5. Special precautions for user                           |   |
|  | x II of MARPOL 73/78 and the IBC Code   |
| Not applicable   |   |
| SECTION 15: Regulatory information                           |   |
| 15.1. US Federal regulations                                 |   |
| 1,2,3,5,6,7-HEXACN (PCN-67) (13C10, 98%) 1                   | 0 UG/ML IN ISOOCTANE  |
| SARA Section 302 Threshold Planning                          | Not subject to reporting requirements of the United States SARA Section 302.  |
| Quantity (TPQ)   |   |
| SARA Section 311/312 Hazard Classes                          | Fire hazard   |
| CADA Contine 242 Entenies Description                        | Delayed (chronic) health hazard   |
| SARA Section 313 - Emission Reporting                        | Not subject to reporing requirements of the United States SARA Section 313.   |
| ISOOCTANE UNLABELED (540-84-1)                               |   |
| SARA Section 302 Threshold Planning<br>Quantity (TPQ)        | Not subject to reporing requirements of the United States SARA Section 302.   |
| CARA Section 211/212 Llazard Classes                         |   |

SARA Section 311/312 Hazard Classes

SARA Section 313 - Emission Reporting

Fire hazard

Delayed (chronic) health hazard

Not subject to reporing requirements of the United States SARA Section 313.

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### 15.2. International regulations

#### **CANADA**

| 1,2,3,5,6,7-HEXACN (PCN-67 | ) (13C10, 98%) 10 UG/ML IN ISOOCTANE |
|----------------------------|--------------------------------------|
|----------------------------|--------------------------------------|

Listed on the Canadian DSL (Domestic Substances List)

#### 15.2.1. **National regulations**

No additional information available

#### 15.3. US State regulations

| 1,2,3,5,6,7-HEXACN (PCN-67) (13C10, 98%) 10 UG/ML IN ISOOCTANE      |  |  |   |                                  |  |  |
|---|--|--|---|----------------------------------|--|--|
| U.S California - Proposition 65 - Carcinogens List                  |  | No   |   |                                  |  |  |
| U.S California - Proposition 65 - Developmental<br>Toxicity         |  | No   |   |                                  |  |  |
| U.S California - Proposition 65 - Reproductive<br>Toxicity - Female |  | No   |   |                                  |  |  |
| U.S California - Proposition 65 - Reproductive<br>Toxicity - Male   |  | No   |   |                                  |  |  |
| State or local regulations  |  | U.S Massachusetts - Right To Know List<br>U.S Pennsylvania - RTK (Right to Know) List<br>U.S New Jersey - Right to Know Hazardous Substance List |   |                                  |  |  |
| ISOOCTANE UNLABELED (540-84-1)                                      |  |  |   |                                  |  |  |
| U.S California -<br>Proposition 65 -<br>Carcinogens List            | U.S California -<br>Proposition 65 -<br>Developmental Toxicity | U.S California -<br>Proposition 65 -<br>Reproductive Toxicity -<br>Female  | U.S California -<br>Proposition 65 -<br>Reproductive Toxicity -<br>Male | No significant risk level (NSRL) |  |  |
| No  | No   | No   | No  |                                  |  |  |
| ISOOCTANE UNLABELED (540-84-1)                                      |  |  |   |                                  |  |  |

State or local regulations

U.S. - Massachusetts - Right To Know List

U.S. - Pennsylvania - RTK (Right to Know) List

U.S. - New Jersey - Right to Know Hazardous Substance List

### SECTION 16: Other information

Other information

: This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of R-. H- and EUH-phrases:

| Acute toxicity (oral) Category 4                                  |
|---|
| Hazardous to the aquatic environment - Acute Hazard Category 1    |
| Hazardous to the aquatic environment - Chronic Hazard Category 1  |
| Aspiration hazard Category 1                                      |
| Serious eye damage/eye irritation Category 1                      |
| Flammable liquids Category 2                                      |
| Skin corrosion/irritation Category 2                              |
| Specific target organ toxicity (repeated exposure) Category 1     |
| Specific target organ toxicity (repeated exposure) Category 2     |
| Specific target organ toxicity (single exposure) Category 3       |
| Highly flammable liquid and vapor                                 |
| Harmful if swallowed  |
| May be fatal if swallowed and enters airways                      |
| Causes skin irritation  |
| Causes serious eye damage   |
| May cause drowsiness or dizziness                                 |
| Causes damage to organs through prolonged or repeated exposure    |
| May cause damage to organs through prolonged or repeated exposure |
| Very toxic to aquatic life  |
| Very toxic to aquatic life with long lasting effects              |
|   |

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| R11       | Highly flammable  |
|-----------|---|
| R20/21    | Harmful by inhalation and in contact with skin  |
| R36/37/38 | Irritating to eyes, respiratory system and skin   |
| R38       | Irritating to skin  |
| R50/53    | Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment |
| R65       | Harmful: may cause lung damage if swallowed   |
| R67       | Vapors may cause drowsiness and dizziness   |
| F         | Highly flammable  |
| Ν         | Dangerous for the environment   |
| Xi        | Irritant  |
| Xn        | Harmful   |

| NFPA health hazard | : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.  |     |
|--------------------|---|-----|
| NFPA fire hazard   | <ul> <li>3 - Liquids and solids (including finely divided suspended<br/>solids) that can be ignited under almost all ambient<br/>temperature conditions.</li> </ul> | 2 0 |
| NFPA reactivity    | : 0 - Material that in themselves are normally stable, even under fire conditions.  |     |
| HMIS III Rating    |   |     |
| Health             | : 2 Moderate Hazard - Temporary or minor injury may occur   |     |
| Flammability       | : 3 Serious Hazard  |     |
| Physical           | : 0 Minimal Hazard  |     |

### CIL Mixture SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product