## 1 Identification

- **Product identifier**
- **Trade name:** Cyclooctene
- **Part number:** WRK-104Q
- **CAS Number:** 931-87-3
- **EC number:** 213-243-4
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** Agilent Technologies, Inc.
    5301 Stevens Creek Blvd.
    Santa Clara, CA  95051  USA
- **Information department:**
  - Telephone: 800-227-9770
  - e-mail: pdl-msds_author@agilent.com
  - **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

## 2 Hazard identification

- **Classification of the substance or mixture**
  - GHS02 Flame

  - Flammable Liquids - Category 3  H226  Flammable liquid and vapour.

- **Label elements**
  - **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**

  - GHS02

- **Signal word** Warning
- **Hazard statements**
  - Flammable liquid and vapour.
- **Precautionary statements**
  - If medical advice is needed, have product container or label at hand.
  - Keep out of reach of children.
  - Read label before use.
  - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  - Keep container tightly closed.
  - Ground and bond container and receiving equipment.
  - Use explosion-proof [electrical/ventilating/lighting] equipment.
  - Use non-sparking tools.
  - Take actions to prevent static discharges.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

(Contd. on page 2)
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**
  - **NFPA ratings (scale 0 - 4):**
    - Health = 0
    - Fire = 3
    - Reactivity = 0

- **HMIS-ratings (scale 0 - 4):**
  - Health = 0
  - Fire = 3
  - Reactivity = 0

### 3 Composition/Information on ingredients

- **Chemical characterization:** Substances
- **CAS No. Description**
  - 931-87-3 (Z)-cyclooctene
- **Identification number(s)**
  - EC number: 213-243-4

### 4 First aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
  - Most important symptoms and effects, both acute and delayed: No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

### 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
  - CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  - For safety reasons unsuitable extinguishing agents: Water with full jet
- **Special hazards arising from the substance or mixture:** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.
6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.
- Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

- Handling:
  - Precautions for safe handling No special precautions are necessary if used correctly.
- Information about protection against explosions and fires:
  - Keep ignition sources away - Do not smoke.
  - Protect against electrostatic charges.
- Conditions for safe storage, including any incompatibilities
  - Storage:
    - Requirements to be met by storerooms and receptacles: No special requirements.
    - Information about storage in one common storage facility: Not required.
    - Further information about storage conditions: Keep receptacle tightly sealed.
  - Specific end use(s) No further relevant information available.

8 Exposure controls/ Personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
  - Components with limit values that require monitoring at the workplace: Not required.
  - Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
  - Personal protective equipment:
    - General protective and hygienic measures: Immediately remove all soiled and contaminated clothing.
    - Wash hands before breaks and at the end of work.
- Breathing equipment:
  - When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
  - Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device/equipment with appropriate organic or acid gas cartridge.
- Protection of hands:
  - Although not recommended for constant contact with the chemicals or for clean-up, nitrile gloves 11-13 mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil thickness with breakthrough times
Trade name: Cyclooctene

- Material of gloves
  - For normal use: nitrile rubber, 11-13 mil thickness
  - For direct contact with the chemical: butyl rubber, 12-15 mil thickness
  - The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- Penetration time of glove material
  - For normal use: nitrile rubber: 1 hour
  - For direct contact with the chemical: butyl rubber: >4 hours

- Eye protection:
  - Tightly sealed goggles

9 Physical and chemical properties

- Information on basic physical and chemical properties
  - General Information
    - Appearance:
      - Form: Fluid
      - Color: Not determined.
      - Odor: Characteristic
      - Odor threshold: Not determined.
    - pH-value: Not determined.
  - Change in condition
    - Melting point/Melting range: -16 °C
    - Boiling point/Boiling range: 144 °C
  - Flash point: 25 °C
  - Flammability (solid, gaseous): Not applicable.
  - Decomposition temperature: Not determined.
  - Auto igniting: Not determined.
  - Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
  - Explosion limits:
    - Lower: Not determined.
    - Upper: Not determined.
  - Vapor pressure at 20 °C: 8 hPa
  - Density at 20 °C: 0.846 g/cm³
  - Relative density
  - Vapor density
  - Evaporation rate
  - Solubility in / Miscibility with
    - Water: Not miscible or difficult to mix.
Trade name: Cyclooctene

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
  - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
  - **Possibility of hazardous reactions** No dangerous reactions known.
  - **Conditions to avoid** No further relevant information available.
  - **Incompatible materials:** No further relevant information available.
  - **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity:**
    - **Primary irritant effect:**
      - **on the skin:** No irritant effect.
      - **on the eye:** No irritating effect.
      - **Sensitization:** No sensitizing effects known.
    - **Additional toxicological information:**
  - **Carcinogenic categories**
    - **IARC (International Agency for Research on Cancer)**
      Substance is not listed.
    - **NTP (National Toxicology Program)**
      Substance is not listed.

12 Ecological information

- **Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
  - **Persistence and degradability** No further relevant information available.
  - **Behavior in environmental systems:**
    - **Bioaccumulative potential** No further relevant information available.
    - **Mobility in soil** No further relevant information available.
  - **Additional ecological information:**
  - **General notes:**
    Water hazard class 2 (Assessment by list): hazardous for water
    Do not allow product to reach ground water, water course or sewage system.
    Danger to drinking water if even small quantities leak into the ground.
  - **Results of PBT and vPvB assessment**
  - **PBT:** Not applicable.
Trade name: Cyclooctene

- vPvB: Not applicable.
- Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- UN-Number
  - DOT, TDG, IMDG, IATA: UN3295
- UN proper shipping name
  - DOT: Hydrocarbons, liquid, n.o.s.
  - TDG: 3295 HYDROCARBONS, LIQUID, N.O.S.
  - IMDG, IATA: HYDROCARBONS, LIQUID, N.O.S.
- Transport hazard class(es)
  - DOT, TDG, IMDG, IATA
  - Class: 3 Flammable liquids
  - Label: 3
  - Packing group
    - DOT, TDG, IMDG, IATA: II
  - Environmental hazards: Not applicable.
  - Special precautions for user
    - Warning: Flammable liquids
  - Danger code (Kemler): 33
  - EMS Number: F-E,S-D
  - Stowage Category: B
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.
- Transport/Additional information:
  - DOT
    - Quantity limitations: On passenger aircraft/rail: 5 L
    - On cargo aircraft only: 60 L
Trade name: Cyclooctene

- **TDG**
  - **Excepted quantities (EQ)**
    - Code: E2
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 500 ml

- **IMDG**
  - **Limited quantities (LQ)**: 1L
  - **Excepted quantities (EQ)**
    - Code: E2
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 500 ml

- **UN "Model Regulation"**: UN 3295 HYDROCARBONS, LIQUID, N.O.S., 3, II

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **Sara**
    - **Section 355 (extremely hazardous substances)**: Substance is not listed.
    - **Section 313 (Specific toxic chemical listings)**: Substance is not listed.

- **TSCA (Toxic Substances Control Act)**: Substance is listed.

- **Canadian substance listings**
  - **Canadian Domestic Substances List (DSL)**: Substance is not listed.
  - **Canadian Ingredient Disclosure list (limit 0.1%)**: Substance is not listed.
  - **Canadian Ingredient Disclosure list (limit 1%)**: Substance is not listed.

- **Chemical safety assessment**: A Chemical Safety Assessment has not been carried out.

### 16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation.

No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- **Department issuing SDS**: Document Control / Regulatory
- **Contact**: regulatory@ultrasci.com
- **Date of the latest revision of the safety data sheet**: 03/25/2019 / 2
- **Abbreviations and acronyms**:
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - PBT: Persistent, Bioaccumulative and Toxic
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<th>Trade name: Cyclooctene</th>
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vPvB: very Persistent and very Bioaccumulative

* Data compared to the previous version altered.