1 Identification

- Product identifier
- Trade name: n-Octane
- Part number: RNA-020
- CAS Number: 111-65-9
- EC number: 203-892-1
- Index number: 601-009-00-8
- Relevant identified uses of the substance or mixture and uses advised against
  Reagents and Standards for Analytical Chemical Laboratory Use
- Details of the supplier of the safety data sheet
  Manufacturer/Supplier: Agilent Technologies Australia Pty Ltd
  679 Springvale Road
  Mulgrave
  Victoria 3170, Australia
- Further information obtainable from:
  Telephone: 1800 802 402
  e-mail: pdl-msds_author@agilent.com
- Emergency telephone number: CHEMTREC®: +(61) - 290372994

2 Hazard(s) Identification

- Classification of the substance or mixture
  
  🔥 flam. Liq. 2 H225 Highly flammable liquid and vapour.

  🔴 health hazard

  Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

  ! Skin Irrit. 2 H315 Causes skin irritation.

  STOT SE 3 H336 May cause drowsiness or dizziness.

- Label elements
- GHS label elements
  The substance is classified and labelled according to the Globally Harmonised System (GHS).

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48.1.26

· Hazard pictograms

GHS02  GHS07  GHS08

· Signal word Danger

· Hazard-determining components of labelling:
  octane

· Hazard statements
  Highly flammable liquid and vapour.
  Causes skin irritation.
  May cause drowsiness or dizziness.
  May be fatal if swallowed and enters airways.

· 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/sparks/open flames/hot surfaces. No smoking.
  Ground/bond container and receiving equipment.
  Use explosion-proof electrical/ventilating/lighting equipment.
  Use only non-sparking tools.
  Take precautionary measures against static discharge.
  Avoid breathing dust/fume/gas/mist/vapours/spray.
  Wash thoroughly after handling.
  Use only outdoors or in a well-ventilated area.
  Wear protective gloves/protective clothing/eye protection/face protection.
  IF SWALLOWED: Immediately call a POISON CENTER/doctor.
  Specific treatment (see on this label).
  Do NOT induce vomiting.
  IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  Call a POISON CENTER/doctor if you feel unwell.
  If skin irritation occurs: Get medical advice/attention.
  Take off contaminated clothing and wash before reuse.
  In case of fire: Use for extinction: CO2, powder or water spray.
  Store in a well-ventilated place. Keep container tightly closed.
  Store in a well-ventilated place. Keep cool.
  Store locked up.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

· Other hazards
  · Results of PBT and vPvB assessment
    · PBT: Not applicable.
    · vPvB: Not applicable.

3 Composition and Information on Ingredients

· Chemical characterisation: Substances
· CAS No. Description
  111-65-9 octane
Trade name: n-Octane

4 First Aid Measures

· Description of first aid measures
  · General information: Immediately remove any clothing soiled by the product.
  · After inhalation: In case of unconsciousness place patient stably in side position for transportation.
  · After skin contact: Immediately wash with water and soap and rinse thoroughly.
  · 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 Fire Fighting Measures

· Extinguishing media
  · Suitable extinguishing agents:
    CO2, 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 first responders
  · 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 product to reach sewage system or any water course.
    Inform respective authorities in case of seepage into water course or sewage system.
    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:
  Ensure good ventilation/exhaustion at the workplace.
- Information about fire - and explosion protection:
  Keep ignition sources away - Do not smoke.
- Conditions for safe storage, including any incompatibilities:
- Storage:
  - Requirements to be met by storerooms and receptacles: Store in a cool location.
  - Information about storage in one common storage facility: Not required.
- Further information about storage conditions:
  - Keep container tightly sealed.
- Specific end use(s) No further relevant information available.

8 Exposure controls and personal protection

- Additional information about design of technical facilities: No further data; see item 7.
- Control parameters:

| Ingredients with limit values that require monitoring at the workplace: |
| --- | --- | --- |
| 111-65-9 octane |   |   |
| NES Short-term value: 1750 mg/m³, 375 ppm | Long-term value: 1400 mg/m³, 300 ppm |
| WES Short-term value: 1750 mg/m³, 375 ppm | Long-term value: 1400 mg/m³, 300 ppm |

- Additional information: The lists valid during the making were used as basis.
- Exposure controls
- Personal protective equipment:
- General protective and hygienic measures:
  - Keep away from foodstuffs, beverages and feed.
  - Immediately remove all soiled and contaminated clothing
  - Wash hands before breaks and at the end of work.
  - Avoid contact with the skin.
  - Avoid contact with the eyes and skin.

- Respiratory protection:
  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 11-13mil thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.
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
Colour: Colourless
Odour: Nearly odourless
Odour threshold: Not determined.

pH-value:
Not determined.

Change in condition
Melting point/freezing point: -56.5 °C
Initial boiling point and boiling range: 126 °C

Flash point:
13 °C

Flammability (solid, gas):
Not applicable.

Ignition temperature:
210 °C

Decomposition temperature:
Not determined.

Auto-ignition temperature:
Not determined.

Explosion properties:
Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

Explosion limits:
Lower: 0.8 Vol %
Upper: 6.5 Vol %

Vapour pressure at 20 °C: 15 hPa

Density at 20 °C: 0.7 g/cm³
Relative density
Not determined.
Vapour density
Not determined.
Evaporation rate
Not determined.

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Trade name: n-Octane

- **Solubility in / Miscibility with water at 20 °C:** 0.00007 g/l
- **Partition coefficient: n-octanol/water:** Not determined.
- **Viscosity:**
  - Dynamic: Not determined.
  - Kinematic: Not determined.
- **Solvent content:**
  - Organic solvents: 100.0 %
  - VOC (EC): 100.00 %
- **Other information**
  No further relevant information available.

### 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**
  - **Skin corrosion/irritation** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** No irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.

### 12 Ecological Information

- **Toxicity**
  - **Aquatic toxicity** No further relevant information available.
  - **Persistence and degradability** No further relevant information available.
- **Behaviour 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 (German Regulation) (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.
  - **vPvB**: Not applicable.
### 13 Disposal considerations

- **Waste treatment methods**
  - **Recommendation:** Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packaging:**
  - **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- **UN-Number**
  - ADG, IMDG, IATA
  - UN1262

- **UN proper shipping name**
  - ADG
  - IMDG, IATA
  - 1262 OCTANES, ENVIRONMENTALLY HAZARDOUS OCTANES

#### ADG

- **Transport hazard class(es)**
  - **Class:** 3
  - **Label:** Flammable liquids.

#### IMDG, IATA

- **Class:** 3
  - **Label:** Flammable liquids.

- **Packing group**
  - ADG, IMDG, IATA
  - II

- **Environmental hazards:**
  - **Special marking (ADG):** Symbol (fish and tree)

- **Special precautions for user**
  - **Warning:** Flammable liquids.
  - **Danger code (Kemler):** 33
  - **EMS Number:** 3-07
  - **Stowage Category:** B

- **Transport in bulk according to Annex II of Marpol and the IBC Code**
  - Not applicable.
Trade name: n-Octane

- **Transport/Additional information:**
  - ADG
  - 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
  - Transport category 2
  - Tunnel restriction code D/E

- **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 1262 OCTANES, 3, II, ENVIRONMENTALLY HAZARDOUS

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - Australian Inventory of Chemical Substances
    - Substance is listed.
  - Standard for the Uniform Scheduling of Medicines and Poisons
    - Substance is not listed.
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I
    - Substance is not listed.
  - Seveso category
    - E1 Hazardous to the Aquatic Environment
    - P5c FLAMMABLE LIQUIDS
  - Qualifying quantity (tonnes) for the application of lower-tier requirements 100 t
  - Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t
  - 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
- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
Trade name: n-Octane

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
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<tbody>
<tr>
<td>vPvB</td>
<td>Very Persistent and very Bioaccumulative</td>
</tr>
<tr>
<td>Flam. Liq.</td>
<td>Flammable liquids – Category 2</td>
</tr>
<tr>
<td>Skin Irrit.</td>
<td>Skin corrosion/irritation – Category 2</td>
</tr>
<tr>
<td>STOT SE</td>
<td>Specific target organ toxicity (single exposure) – Category 3</td>
</tr>
<tr>
<td>Asp. Tox.</td>
<td>Aspiration hazard – Category 1</td>
</tr>
</tbody>
</table>

* Data compared to the previous version altered.