

## Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 11/01/2015

Reviewed on 11/01/2015

### 1 Identification

- **Product Identifier**
- **Trade name:** Methyl ethyl ketone
- **CAS Number:**  
78-93-3
- **EC number:**  
201-159-0
- **Index number:**  
606-002-00-3
- **Relevant identified uses of the substance or mixture and uses advised against:**  
No further relevant information available.
- **Product Description** PC19 Intermediate
- **Details of the Supplier of the Safety Data Sheet:**
- **Manufacturer/Supplier:**  
NuGeneration Technologies, LLC (dba NuGenTec)  
1155 Park Avenue, Emeryville, CA 94608  
salesteam@nugentec.com [www.nugentec.com](http://www.nugentec.com)  
1-888-996-8436 or 1-707-820-4080 for product information
- **Emergency telephone number:**  
PERS Emergency Response: Domestic and Canada - 1-800-633-8253, International 1-801-629-0667

### 2 Hazard(s) Identification

- **Classification of the substance or mixture:**



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.

STOT SE 3 H336 May cause drowsiness or dizziness.

- **Label elements:**

- **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms:**



GHS02 GHS07

- **Signal word:** Danger

- **Hazard statements:**

Highly flammable liquid and vapor.

Causes serious eye irritation.

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May cause drowsiness or dizziness.

• **Precautionary statements:**

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Avoid breathing dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wear protective gloves / eye protection / face protection.

Wear eye protection / face protection.

Ground/bond container and receiving equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Wash thoroughly after handling.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/doctor if you feel unwell.

If eye irritation persists: Get medical advice/attention.

In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.

Store locked up.

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

Store in a well-ventilated place. Keep cool.

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

• **Unknown acute toxicity:**

0 % of the mixture consists of component(s) of unknown toxicity.

• **Classification system:**

• **NFPA ratings (scale 0 - 4)**



Health = 1

Fire = 3

Reactivity = 0

• **HMIS-ratings (scale 0 - 4)**



Health = 1

Fire = 3

Reactivity = 0

• **Hazard(s) not otherwise classified (HNOC):** None known

### 3 Composition/Information on Ingredients

• **Chemical characterization:** Substance

• **CAS No. Description**

78-93-3 Methyl ethyl ketone

• **Identification number(s)**

• **EC number:** 201-159-0

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### 4 First-Aid Measures

**Description of first aid measures:**

- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.  
Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If swallowed and symptoms occur, consult a 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:**  
CO<sub>2</sub>, 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:**  
Flash back possible over considerable distance. Container explosion may occur under fire conditions.
- **Advice for firefighters:**
- **Protective equipment:**  
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

### 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 (i.e. sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.  
Dispose of the collected material according to regulations.
- **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.

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### 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:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
No further relevant information available..  
Store in cool, dry conditions in well sealed receptacles.
- **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 section 7.

- **Control parameters:**

- **Components with occupational exposure limits:**

**78-93-3 Methyl ethyl ketone**

PEL	Long-term value: 590 mg/m <sup>3</sup> , 200 ppm
REL	Short-term value: 885 mg/m <sup>3</sup> , 300 ppm Long-term value: 590 mg/m <sup>3</sup> , 200 ppm
TLV	Short-term value: 885 mg/m <sup>3</sup> , 300 ppm Long-term value: 590 mg/m <sup>3</sup> , 200 ppm BEI

- **Ingredients with biological limit values:**

**78-93-3 Methyl ethyl ketone**

BEI	2 mg/L urine end of shift MEK
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- **Additional information:** The lists that were valid during the creation of this SDS were used as basis.

- **Exposure controls:**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing and wash before reuse.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

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- **Breathing equipment:** Not required.
- **Protection of hands:** Not required.
- **Material of gloves:**  
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:** Not applicable.
- **Eye protection:**



Tightly sealed goggles

### 9 Physical and Chemical Properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
  - Form:** Liquid
  - Color:** Clear
- **Odor:** Pleasant
- **Odor threshold:** Not determined.
- **pH-value:** Acidic
- **Change in condition**
  - Melting point/Melting range:** -86.3 °C (-123 °F)
  - Boiling point/Boiling range:** 79-80.5 °C (174-177 °F)
- **Flash point:** -4 °C (25 °F)
- **Flammability (solid, gaseous):** Not applicable.
- **Ignition temperature:** 514 °C (957 °F)
- **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:** 1.8 Vol %
  - Upper:** 11.5 Vol %
- **Vapor pressure @ 20 °C (68 °F):** 95 hPa (71 mm Hg)
- **Density @ 20 °C (68 °F):** 0.804-0.807 g/cm<sup>3</sup> (6.709-6.734 lbs/gal)
- **Relative density:** Not determined.
- **Vapor density:** Not determined.
- **Evaporation rate:** Not determined.

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- **Solubility in / Miscibility with:**  
 Water @ 20 °C (68 °F): 290 g/l
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**  
 Dynamic @ 15 °C (59 °F): 0.423 mPas  
 Kinematic: Not determined.
- **Other information:** No further relevant information available.

### 10 Stability and Reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:**  
 No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** Heat, flame and ignition sources.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological Information

- **Information on toxicological effects:**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

Oral	LD50	3300 mg/kg (rat)
Dermal	LD50	5000 mg/kg (rabbit)
Inhalative	LC50/96 hours	3130-3320 mg/l (Pimephales)

- **Primary irritant effect:**
- **On the skin:** No irritating effect.
- **On the eye:** Irritating effect.
- **Additional toxicological information:**
- **Carcinogenic categories:**
- **IARC (International Agency for Research on Cancer):**
- **NTP (National Toxicology Program):** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration):** Substance is not listed.

### 12 Ecological Information

- **Toxicity:**

- **Aquatic toxicity:**

EC50	7060 mg/l (daphnia)
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- **Persistence and degradability:** No further relevant information available.

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- **Behavior in environmental systems:**
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Do not allow undiluted product or product that has not been neutralized to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment:**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:** No further relevant information available.

### 13 Disposal Considerations

- **Waste treatment methods:**
- **Recommendation:**  
Observe all federal, state and local environmental regulations when disposing of this material.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport Information

- **UN-Number:**
- **DOT, ADR, IMDG, IATA** UN1193
- **UN proper shipping name:**
- **DOT** Ethyl methyl ketone
- **ADR** UN1193 Ethyl methyl ketone
- **IMDG, IATA** ETHYL METHYL KETONE (METHYL ETHYL KETONE)
- **Transport hazard class(es):**

· **DOT**



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

· **ADR**



- **Class:** 3 (F1) Flammable liquids

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<ul style="list-style-type: none"> <li>· <b>Label:</b></li> <li>· <b>IMDG, IATA</b></li> </ul>	<p style="text-align: center;">3</p> <hr style="border-top: 1px dashed #000;"/>
	
<ul style="list-style-type: none"> <li>· <b>Class:</b></li> <li>· <b>Label:</b></li> <li>· <b>Packing group:</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> <li>· <b>Environmental hazards:</b></li> <li>· <b>Special precautions for user:</b></li> <li>· <b>Danger code (Kemler):</b></li> <li>· <b>EMS Number:</b></li> <li>· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:</b></li> <li>· <b>Transport/Additional information:</b></li> <li>· <b>DOT</b></li> <li>· <b>Quantity limitations:</b></li> <li>· <b>Hazardous substance:</b></li> </ul>	<p>3 Flammable liquids</p> <p>3</p> <p>II</p> <p>Not applicable.</p> <p>Warning: Flammable liquids</p> <p>33</p> <p>F-E,S-D</p> <p>Not applicable.</p> <p>On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L</p> <p>5000 lbs, 2270 kg</p>
<ul style="list-style-type: none"> <li>· <b>ADR</b></li> <li>· <b>Excepted quantities (EQ):</b></li> </ul>	<p>Code: E2</p> <p>Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml</p>
<ul style="list-style-type: none"> <li>· <b>IMDG</b></li> <li>· <b>Limited quantities (LQ):</b></li> <li>· <b>Excepted quantities (EQ):</b></li> </ul>	<p>1L</p> <p>Code: E2</p> <p>Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml</p>
<ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>	<p>UN 1193 ETHYL METHYL KETONE, 3, II</p>

### 15 Regulatory Information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
- **SARA (Superfund Amendments and Reauthorization):**
- **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.
- **California Proposition 65:**
- **Chemicals known to cause cancer:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
- **Chemicals known to cause developmental toxicity:** Substance is not listed.

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- **Carcinogenic categories:**
- **EPA (Environmental Protection Agency):** Substance is not listed.
- **TLV (Threshold Limit Value established by ACGIH):** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health):** Substance is not listed.
- **GHS label elements**  
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**



GHS02 GHS07

- **Signal word:** Danger
- **Hazard statements:**  
Highly flammable liquid and vapor.  
Causes serious eye irritation.  
May cause drowsiness or dizziness.
- **Precautionary statements:**  
Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
Use explosion-proof electrical/ventilating/lighting/equipment.  
Avoid breathing dust/fume/gas/mist/vapors/spray.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves / eye protection / face protection.  
Wear eye protection / face protection.  
Ground/bond container and receiving equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Wash thoroughly after handling.  
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
Call a POISON CENTER/doctor if you feel unwell.  
If eye irritation persists: Get medical advice/attention.  
In case of fire: Use for extinction: CO2, powder or water spray.  
Store locked up.  
Store in a well-ventilated place. Keep container tightly closed.  
Store in a well-ventilated place. Keep cool.  
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **National regulations:** Non-Regulated Material
- **State Right to Know:** None of the ingredients are listed
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user

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to determine applicability of this information and the suitability of the material or product for any particular purpose.

• **Date of preparation / last revision:** 11/01/2015 / 2

• **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road

ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids, Hazard Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

• **\* Data compared to the previous version altered.**

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