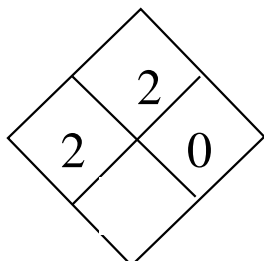


**PRODUCT: 2-ETHYL HEXANOL (OCTANOL)**

ISSUE DATE: 25/07/2002 REV. DATE: 03/10/2007 MSDS Nº: 78 REV. Nº: 4 PAGE: 1/7

**HAZARDS DIAMMOND – NFPA 704****Fire 2 – Low Flammability****Health 2– Dangerous****Reactivity 0 – no hazard under normal conditions****1. PRODUCT AND COMPANY IDENTIFICATION**

- Product name (label): 2-Ethyl Hexanol
- Supplier name, address and telephone number:  
Elekeiroz S.A. (Várzea Paulista-SP Plant) - Rua Dr. Edgardo de Azevedo Soares, 392  
CEP 13224-030  
**(00-55-11) 4596-8880 or (00-55-11) 4596-8788 or (00-55-11) 4596-8768(Business hours)**  
**(00-55-11) 4596-8800 or (00-55-11) 9961-4808 (24h)**  
Fax: (00-55-11) 4596-8881  
E-mail (customer service):  
[elisabete.moskalenko@elekeiroz.com.br](mailto:elisabete.moskalenko@elekeiroz.com.br)  
[carlos.villani@elekeiroz.com.br](mailto:carlos.villani@elekeiroz.com.br)

**2. COMPOSITION AND INFORMATION ABOUT INGREDIENTS**

- Common chemical name of the substance: 2-Ethyl Hexanol
- Synonyms:  
Octanol, 2-EthylHexyl Alcohol, Octil Alcohol.
- Register in *Chemical Abstract Service* (n° C.A.S):  
[104-76-7]
- Hazardous ingredients:  
2-Ethyl hexanol 99,5% (minimum)

**3. HAZARDS IDENTIFICATION**

- Hazards and most important effects:  
Irritating to eyes/skin/respiratory tract when heated or misted. Other Acute Effects: headache, weakness, nausea, giddiness, ataxia, CNS depression.  
Primary entry routes: inhalation, skin contact/absorption.  
Combustible.

**PRODUCT: 2-ETHYL HEXANOL (OCTANOL)**

ISSUE DATE: 25/07/2002    REV. DATE: 03/10/2007    MSDS Nº: 78    REV. Nº: 4    PAGE: 2/7

**4. FIRST AID MEASURES**

- **Inhalation:**  
Remove the victim from the area. If the respiration has stopped, apply artificial respiration (by a qualified person – Physician or Paramedic). If the respiration is difficult, apply oxygen (with medical help or through a first aid trained person). Keep the victim lying down and warm.
- **Contact with the skin:**  
Wash immediately the affected area with water, during at least 15 minutes, while clothes are removed. Wash with water and soap, right after
- **Contact with the eyes:**  
Wash them immediately with water during at least 15 minutes, including under eyelids. Remove contact lenses, if applicable, with medical help. Do not allow the victim to rub his/her eyes or keep them closed.
- **Ingestion:**  
Do not induce vomit, unless the physician has given orientations about that. If the victim is conscious, give him/her 1 or 2 water or milk glasses to dilute the material. Never give anything through the mouth to an unconscious person.
- **Observation: in any situation, the victim should be sent to emergency medical service.**
- **Information to physician:**  
To treat poisoning by the higher aliphatic alcohols:
  1. Gastric lavage with copious amounts of water.
  2. It may be beneficial to instill 60 mL of mineral oil into the stomach.
  3. Oxygen and artificial respiration as needed.
  4. Electrolyte balance: it may be useful to start 500 mL M/6 sodium bicarbonate intravenously but maintain a cautions and conservative attitude toward electrolyte replacement unless shock or severe acidosis threatens.
  5. To protect the liver, maintain carbohydrate intake by intravenous infusions of glucose.
  6. Hemodialysis if coma is deep and persistent.

**5. FIREFIGHTING MEASURES**

- **Proper extinguishing media:**  
-Light fire: alcohol stable foam; dry chemical powder. Carbon dioxide. Water spray or fog – Large fires only
- **Specific hazards:**  
Combustible. Slight fire hazard when exposed to heat or flame. Heating may cause expansion or decomposition leading to violent rupture of containers. On combustion, may emit toxic fumes of carbon dioxide (CO). May emit acrid smoke. Mists containing combustible materials may be explosive.

**PRODUCT: 2-ETHYL HEXANOL (OCTANOL)**

ISSUE DATE: 25/07/2002    REV. DATE: 03/10/2007    MSDS Nº: 78    REV. Nº: 4    PAGE: 3/7

- Fire Incompatibility:  
Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.
- Specific methods / firemen protection:
  - Wear full firefighting clothes, with self-contained breathing apparatus.
  - Remove flammable/combustible materials from fire area, if this operation can be accomplished without risks.
  - Confine wastewaters from fire control for later disposal.
  - Cool with water the side parts of the containers exposed to flames, long time after the fire is extinguished.

**6. MEASURES TO CONTROL SPILLS OR LEAKAGES**

- Personal precautions:  
Isolate the area; evacuate area; keep away or eliminate heat sources; provide local ventilation, with explosion proof equipment. Prevent the contact of the product with skin, eyes and respiratory ways, wearing personal protective equipment, mentioned in item 8.
- Environmental precautions:  
Avoid product flowing off to sewage galleries or water bodies.
- Cleaning methods:  
Every cleaning procedure should be performed using antisparking materials and equipment. The waste should be absorbed with sand or ash, or any other non combustible and non sparking absorbant material, packed in containers, always with a water layer covering the waste. See item 13.

**7. HANDLING AND STORAGE**

- Handling:
  - Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. DO NOT enter confined spaces until atmosphere has been checked. Avoid smoking, bare lights or ignition sources. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Use good occupation work practices. Observe manufacture's storing and handling recommendations. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.
- Storage:  
Glass container; plastic container; metal can; metal drum. Packing as recommended by manufacturer. Check all containers are clearly labeled and free from leaks.

**PRODUCT: 2-ETHYL HEXANOL (OCTANOL)**

ISSUE DATE: 25/07/2002    REV. DATE: 03/10/2007    MSDS Nº: 78    REV. Nº: 4    PAGE: 4/7

**8. EXPOSURE CONTROL AND PERSONAL PROTECTION**

- Control parameters:  
Governmental Decree 3214/78, Regulating Standard NR-15, no information.  
value (Brazil).  
ACGIH-TLV/TWA = no information.
- Engineering Controls:  
General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear NIOSH-approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas.
- Personal Protective Equipment:
  - PVC, neoprene or latex rubbers.
  - Facial respiratory protection when overexposure risk whit vapor organic filter.
  - Leather safety shoes or PVC or rubber boots, during residues handling.
  - Apron type 'barber' made of trevira, tyvek or pvc, for the operador in charge of the product charge or discharge.
  - Full vision safety glasses.

**9. CHEMICAL AND PHYSICAL PROPERTIES**

- Chemical formula:  $C_8H_{18}O$ .
- Physical state: liquid.
- Color: colorless.
- Odour: similar alcohol.
- pH: not available.
- Specific temperatures at which occurs physical state changes:
  - Melting point:  $-76^{\circ}C$ .
  - Boiling point (760 mmHg):  $184,6^{\circ}C$ .
- Flash point:  $85^{\circ}C$ . (closed cup).
- Auto-ignition temperature:  $305^{\circ}C$ .
- Explosion limits: lower: 2,7% per volume of air  
upper: 7% per volume of air
- Vapor pressure at  $20^{\circ}C$ :  $<0,1$  mmHg.
- Vapor density: 4,5 (Ar=1).
- Liquid density ( $20/4^{\circ}C$ ): 1,263.
- Solubility in water ( $20^{\circ}$ ): 0,10%.

**PRODUCT: 2-ETHYL HEXANOL (OCTANOL)**

ISSUE DATE: 25/07/2002    REV. DATE: 03/10/2007    MSDS Nº: 78    REV. Nº: 4    PAGE: 5/7

**10. REACTIVITY AND STABILITY**

- Specific conditions:  
The substance is considered stable. Hazardous polymerization will not occur.
- Incompatibility:  
Avoid oxidizing agents, acids, acid chlorides, acid anhydrides.

**11. TOXICOLOGICAL INFORMATION**

- Acute toxicity and effects:
  - Inhalation: the vapor/mist is discomforting to the upper respiratory tract. Not normally a hazard due to nonvolatile nature of product. Excessive exposure may result in headache, muscle weakness, nausea, giddiness, ataxia and central nervous system depression.
  - Eyes: the liquid is discomforting to the eyes and is capable of causing a mild, temporary redness of the conjunctiva (similar to wind-burn), temporary impairment of vision and/or other transient eye damage/ulceration. The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
  - Skin: the liquid is discomforting to the skin and is capable of causing allergic skin reactions. The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterized by skin redness (erythema) and swelling (edema) which may progress to vesiculation, scalling and thickening of the epidermis. Histologically there may be intercellular edema of the spongy layer (spongiosis) and intracellular edema of the epidermis.
  - Ingestion: the liquid is discomforting to the gastrointestinal tract and may be harmful if swallowed. Effects on the nervous system characterize over-exposure to higher aliphatic alcohols. These include headache, muscle weakness, giddiness, ataxia, (loss of muscle coordination) confusion, delirium and coma. Gastrointestinal effects may include nausea, vomiting and diarrhea. Aspiration of liquid alcohols produces an especially toxic response as they are able to penetrate deeply in the lung where they are absorbed and may produce pulmonary injury. Those possessing lower viscosity elicit a greater response. The result is a high blood level and prompt death at doses otherwise tolerated by ingestion without aspiration.
- Chronic effects:  
Prolonged or repeated skin contact may result in irritation, reddening and sensitization. The material may accumulate in the human body and progressively cause tissue damage. Repeated oral and dermal exposures to animals has resulted in adverse liver and kidney effects.
- Carcinogenicity: NTP – not listed; IARC – not listed; OSHA – not listed; NIOSH – not listed; ACGIH – not listed; EPA – not listed; MAK – not listed.

**PRODUCT: 2-ETHYL HEXANOL (OCTANOL)**

ISSUE DATE: 25/07/2002    REV. DATE: 03/10/2007    MSDS Nº: 78    REV. Nº: 4    PAGE: 6/7

- Toxicity  
Rat (oral) LD50: 2049mg/kg;  
Rabbit (dermal) LD50: 1970 mg/kg.
- Irritation:  
Rabbit (skin): 415mg/ (open) - mild;  
Rabbit (skin): 500 mg/24h – moderate;  
Rabbit (eye): 4,17 mg – severe;  
Rabbit (eye): 20 mg/24h – moderate.
- Carcinogenicity:  
NTP – não listado; IARC – not listed; OSHA – not listed; NIOSH – not listed; ACGIH – not listed; EPA – not listed; MAK – not listed.

NTP – National Toxicology Program.

IARC – International Agency for Research on Cancer.

OSHA – Occupational Safety and Health Administration.

NIOSH – National Institute of Occupational Safety and Health.

ACGIH – American Conference of Governmental Industrial Hygienists.

EPA – Environmental Protection Act.

**12. ECOLOGICAL INFORMATION**

- Environmental effects, behaviors and impacts of the product:  
If released in soil, it would be expected to leach and readily biodegrade after some acclimation. Some volatilization may occur from both moist and dry soil. If released in water, it will volatilize; the estimated half-life in a model river is 1.7 days. It is readily biodegradable in screening tests and one river die-away test and should biodegrade. Adsorption to sediment and bioconcentration in fish is not expected to be important. In the atmosphere, it will occur as a vapor and react with photochemically produced hydroxyl radicals. Its estimated half-life in the atmosphere is 1.2 days. Since it is moderately water soluble, it may also be washed out of the atmosphere by rain.
- Ecotoxicity: aquatic toxicity: 19 ppm/24 hr/brine shrimp/TLm
- Henry's Law Constant: calculated at  $2.65 \times 10^{-5}$ .
- BCF: estimate at 13.
- Biochemical Oxygen Demand (BOD): 88%, 5 days.
- Soil Sorption Partition Coefficient:  $K_{oc}$  = estimated at 105.

**PRODUCT: 2-ETHYL HEXANOL (OCTANOL)**

ISSUE DATE: 25/07/2002    REV. DATE: 03/10/2007    MSDS Nº: 78    REV. Nº: 4    PAGE: 7/7

**13. CONSIDERATIONS ABOUT TREATMENT AND DISPOSAL**

- Treatment and disposal methods, wastes and used packages:  
Any waste treatment should be in accordance with local and national regulations.

**14. TRANSPORTATION INFORMATION**

- Not regulated.

**15. REGULATION**

EPA Regulation:

- RCRA 40 CFR: not listed.
- CERCLA 40 CFR 302.4: not listed.
- SARA 40 CFR 372.65: not listed.
- SARA EHS 40 CFR 355: not listed.
- TSCA: listed.

EPA – Environmental Protection Agency

SARA - Superfund Amendments and Reauthorization Act

RCRA - Resource Conservation and Recovery Act

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

TSCA - Toxic Substances Control Act

**16. OTHER INFORMATION**

References:

- MSDS - GENIUM PUBLISHING CORP. (sheet n.º ETH7550).
- ACGIH book, portuguese version, 2006 (translation: ABHO).
- Elekeiroz specification
- IATA 2007
- IMO 2006

Observation:

The information contained in this MSDS are offered in good faith and, as an orientation instrument, without incurring in explicit or implicit liability. If additional information or explanations are needed, consult the supplier.