

SAFETY DATA SHEET**Product: DIOCTYL MALEATE**

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1- IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND COMPANY/ UNDERTAKING**Product name:** DIOCTYL MALEATE (DOM)**Company:** ELEKEIROZ S.A.**Address:** Rua Dr. Edgardo de Azevedo Soares, 392
Várzea Paulista - SP
CEP 13224-030**Company phone number:** (0xx11) 4596-8800**Fax:** (0xx11) 4596-8881**Emergency telephone number:** (0xx11) 4596-8800 (24 h)**Company:** ELEKEIROZ S.A.**Address:** Rua João Úrsulo, 1261, Pólo Petroquímico do Nordeste
Camaçari - BA
CEP 42810-000**Company phone number:** (0xx71) 3632-7711**Fax:** (0xx71) 3632-2110**Emergency telephone number:** (0xx71) 3632-7711 (24 h)**Email:** elisabete.moskalenko@elekeiroz.com.br
carlos.villani@elekeiroz.com.br**2- HAZARDS IDENTIFICATION****Most important hazards:** Causes skin irritation. Causes serious eye irritation.**Product effects****Adverse effects to the human health:** It may be uncomfortable to the gastrointestinal tract if swallowed and harmful if ingested in large quantities. Cause moderate irritation to the skin. Causes eye irritation. It can be dangerous if there is aspiration of vomit.**Environmental effects:** Product doesn't present environmental hazard.

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Physical and chemical hazards: Combustible product.

According to Regulation 1272:2008 (GHS):

Classification of the substance or mixture: Skin corrosion/ irritation – Category 2
Serious eye damage/ eye irritation – Category 2A

Label elements according to Regulation 1272:2008 (GHS):

Symbol:



Signal word: WARNING

Hazard Statement: H315 - Causes skin irritation
H319 - Causes serious eye irritation.

Precaution Statement: P264 - Wash with water thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection

Label elements according to Directive 67/548/EEC

Symbol Xi,

Risk Phrases R38 – Irritating to skin.

R36 – Eye Irritant

Safety Phrases: S16 - Keep away from sources of ignition - No smoking.
S3 - Keep in a cool place.
S9 - Keep container in a well-ventilated place.
S13 - Keep away from food, drink and animal feeding stuffs
S24 - Avoid contact with skin.
S25 - Avoid contact with eyes.
S36 - Wear suitable protective clothing.
S37 - Wear suitable gloves
S29 - Do not empty into drains.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S56 - Dispose of this material and its container to hazardous or special waste collection point.

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3- COMPOSITION/INFORMATION ON INGREDIENTS**Substance: DIOCTYL MALEATE (DOM)**

Chemical name:	Dioctyl Maleate
Synonyms:	bis(2-ethylhexyl) maleate
CAS number:	142-16-5
Ingredients or impurities that contribute to the hazard (%m):	Doesn't have ingredients or impurities that contribute to the hazard classification.

4- FIRST-AID MEASURES

Inhalation:	Remove victim to fresh air and keep at rest. Monitor respiratory function. Victim is breathing with difficult, give oxygen. If the victim has dentures must be removed when possible, before starting first aid procedures. If necessary give artificial respiration. Seek medical attention. Take this SDS.
Ingestion:	Rinse the victim's mouth with water. DO NOT INDUCE VOMITING. If vomiting occurs, lean the person forward or turn left lateral position (leave the person lying on the left) to maintain open airway and prevent aspiration. Do not give anything by mouth to an unconscious person, if the victim is conscious give water slowly.
Skin contact:	Remove contaminated clothing and shoes. Wash affected area with water and soap. Wash contaminated clothing and shoes before reuse. Seek medical attention. Take this SDS.
Eye contact:	Wash eyes immediately with running water, keeping the eyelids open. Remove contact lenses if present and easily removable. Seek medical attention. Take this SDS.
Most important symptoms and effects, both acute and delayed:	Nausea, vomiting and pain. Dryness, redness, swelling, scaling, thickening of the skin and dermatitis. Redness, burning and ulceration of the conjunctiva.
Indication of any immediate medical attention and special treatment needed:	Avoid contact with this product while helping the victim; keep the victim warm. Symptomatic treatment should include, above all, measured of support as correction of hydro electrolytic and metabolic disturbances and respiratory failure.

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5- FIREFIGHTING MEASURES

Fire Extinguishing Media:	Use counter-measures compatible with the environment and keep confined other materials that may be involved. Use mechanical foam, carbon dioxide (CO ₂) and dry chemical to fight fire. For large fires use water spray or mist form.
Special hazards arising from the substance or mixture:	Heating may cause expansion or decomposition of containers, causing violent rupture.
Advice for firefighters:	Self-contained breathing apparatus (SCBA) operated in positive pressure mode and complete protective clothing.
Special hazards from the combustion of the chemical:	In combustion can form irritating gases

6- ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	
Removal of ignition sources:	Eliminate preventively all the ignition sources around the area. Do not smoke in the area.
Provision of enough ventilation:	Use in a well ventilated area or with exhaustion system adequate to eliminate mists and vapors.
Prevention of inhalation and skin, mucous membranes and eyes contact:	Do not touch damage containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation, eye and skin contact. Use appropriate personal protective equipment as indicated in Section 8.
Environmental precautions:	Do not let this chemical enter the environment (soil, waterways and groundwater).
Methods and material for containment and cleaning up:	Do not dispose directly into the environment or the sewer system. The dilution water from the fire fighting can cause pollution. Use only antisparks tools and equipment, explosion proof. Small spills: absorb with vemiculite, sand or other absorbent material and non-combustible and put in suitable containers, capped and labeled, for later disposal. Move containers from spill area. If possible, keep the waste in appropriate containers for flammable products. Large spills: contain for later removal. Keep the area clear of personnel and move upwind. Collect material in suitable containers, capped and labeled, for later disposal.

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7- HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with skin, eyes and clothing. Avoid breathing the product. Remove ignition sources and heat. Use proper personal protective equipment as indicated in Section 8.

Hygiene advice: Do not eat, drink or smoke when using this product. Wash hands before eating, drinking, smoking or going to the toilet. Take off all contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities: Keep the product in its original packaging in a covered area, cool, dry place, protected from direct sunlight, at room temperature and fire-proof. Keep container tightly closed. Store away from food. Keep out of reach of children. Ground all containers and equipment that involve loading, unloading and transfer operations in the production and storage areas. Packages must be stored on level ground, on pallets, preferably non-combustible and stacked vertically up into three layers. If the package is a drum, stacking recommended maximum is 3 units (height), given adequate pallet, preferably non-combustible. The product should be stored, when in bulk, in closed containers and vented outdoors or in isolation, avoiding store them with incompatible substances. Atmosphere should be regularly monitored against formation of detonation.

Packaging materials: Metal packaging (cans/drums). Other packages, consult the product manufacturer.

8- EXPOSURE CONTROLS/PERSONAL PROTECTION**Specific control parameters**

Appropriate engineering controls: Provide mechanical ventilation or direct exhaust to the external media. It is recommended safety shower and eye bath available near working area. The engineering controls measures are the most effective to reduce exposure to the product.

Individual protection measures, such as personal protective equipment

Eye/face protection: Protection goggles.

Skin and hand protection: Protective gloves of natural rubber (latex), PVC, neoprene or nitrile. Protective clothing of PCV Trevira. Safety footwear.

Respiratory protection: Half mask or full face mask with chemical filter for organic vapors.

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Thermal hazard:	Complete air-ventilated suit, with air supply, or any thermo-resistant clothing available.
Environmental exposure controls:	Do not dump directly into the environment or into the sewer system. The dilution water from fire fighting can cause pollution.

9- PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquid colorless to slightly yellowish.
Odor:	Characteristic.
Odor threshold:	Not available.
pH:	Not available.
Melting point/freezing point:	- 60°C
Initial boiling point and boiling range	209°C at 10 mmHg
Flashpoint:	182°C
Evaporation Rate	Not available.
Flammability:	Combustible product.
Upper/lower flammability or explosive limits:	Not available.
Vapour density (Air=1):	>1 (Air = 1)
Vapour Pressure (mm Hg):	0.665 kPa at 200°C.
Relative density:	0,9436 at 4 °C. (H ₂ O=1).
Solubility in water:	Insoluble (< 1mg/ml (21°C)
Solubility in other solvents:	Alcohols, acetone, ether, toluene.
Partition coefficient: n-octanol/water:	Not available.
Auto-ignition temperature:	Not available.
Decomposition temperature:	Not available.
Viscosity:	Not available.
Explosive properties:	Not available.
Oxidizing properties:	Not available.

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Other information: Chemical Formula: C80H36O4
 Insoluble in water and aliphatic hydrocarbons.

10- STABILITY AND REACTIVITY

Chemical stability:	Stable under normal conditions of handling and storage. Does not undergo polymerization.
Possibility of hazardous reactions:	May react with oxidizing agents, nitrates, chlorine...
Incompatible materials:	Oxidizing agents, nitrates and chlorine.
Conditions to avoid:	Sources of heat (direct sunlight, sparks, open flames, static loads), incompatible materials.
Hazardous decomposition products:	Monoxide and carbon dioxide and other irritant chemical substances.

11- TOXICOLOGICAL INFORMATION

Acute toxicity:	It may be uncomfortable to the gastrointestinal tract with nausea, vomiting and pain, and harmful if ingested in large quantities.
Skin corrosion/irritation:	Cause mild irritation to skin dryness with prolonged contact that can lead to contact dermatitis, which is characterized by redness, edema that may progress to vesiculation, scaling and thickening of the epidermis.
Serious eye damage/irritation:	Cause mild to temporary irritation with redness and ulceration of the conjunctiva. Prolonged contact can cause conjunctivitis.
Respiratory or skin sensitization:	Not expected to cause respiratory or skin sensitization.
Germ cell mutagenicity:	Germ cell mutagenicity is not expected.
Carcinogenicity:	Not classified as carcinogenic to humans (Group A4 – ACGIH)
Reproductive toxicity:	Not expected to produce toxicity to reproduction and lactation.
STOT – single exposure:	Not expected to present to the target organ toxicity after single exposure.
STOT – repeated exposure:	Not expected to present to the target organ toxicity after repeated exposure.
Aspiration hazard.	Aspiration of vomitus can cause chemical pneumonitis.

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12- ECOLOGICAL INFORMATION

Ecological toxicity:	Not classified as hazardous to aquatic organisms.
Persistence and degradability:	It's expected low persistence and high degradability.
Bioaccumulative potential:	It's expected low bioaccumulation potential.
Mobility in soil:	Not available.
Results of PBT and vPvB assessment:	Not available.

13- DISPOSAL CONSIDERATION

Product:	The treatment and disposal should be evaluated specifically for each product. Can be deposited in landfills, sent to an appropriate incineration or other means of disposal provided they meet the requirements of local law.
Product waste:	Keep the product remains in their original containers and properly sealed. Disposal should be performed as established for the product.
Contaminated packaging:	Do not reuse empty containers. They may contain remnants of the product and must be closed and sent for proper disposal. Recycling can be applied provided they obey the relevant laws.

14- TRANSPORT INFORMATION

National and international regulations	
Land (Road/rail):	UN – “United Nations” Recommendations on the TRANSPORT OF DANGEROUS GOODS. Model Regulations, 16th Edition, 2009.
Waterways (sea/inland):	IMO - “International Maritime Organization” International Maritime Dangerous Goods Code (IMDG Code) - Incorporating Amendment 34-08; 2008 Edition.
Air:	IATA - “International Air Transport Association” Dangerous Goods Regulation (DGR) - 51th Edition, 2010.
UN number:	Not classified as hazardous for transport.
Environmental hazards:	Not hazardous.

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Transport in bulk according to
Annex II of MARPOL73/78 Not listed.
and the IBC Code:

15- REGULATORY INFORMATION

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

Regulation 1272:2008: GHS, United Nations, 3th Revised Edition, 2009

ECB: Directives 67/548 e 1999/45

UN Recommendations on the TRANSPORT OF DANGEROUS GOODS. Model Regulations, 16th Edition, 2009

Restrictions: No use restrictions were found.

16- OTHER INFORMATION

Elekeiroz warns that the handling of any chemical substance requires the previous knowledge of its hazards for the user. It is responsibility of the product user enterprise to promote the training of its employees and contractors about the possible risks arising from the product.

SDS elaborated by InterTox: January, 2011 – <http://www.intertox.com.br>

Abbreviations:

ACGIH – American Conference of Industrial Hygienists

CAS – Chemical Abstracts Service

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