



Material Safety Data Sheet

Marango

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Marango
Synonyms: None
Chemical Family: Not Known
Application: Industrial Degreaser

Distributed By:
 Relay Distributing
 6005 50th Avenue
 Lloydminster, Saskatchewan
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Prepared By: The Environment, Health and Safety Department of Univar Canada Ltd.
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2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Percentage (W/W)	LD50s and LC50s Route & Species:
Stoddard Solvent 8052-41-3	30-60	Oral LD50 : 5 g/kg (rat) Skin LD50 : >3 g/kg (rabbit) Inhalation LC50 : >5500 mg/m ³ /4H (rat)
Ethylene Glycol Monobutyl Ether 111-76-2	10-30	Oral LD50 (Mouse) 1167 mg/kg Oral LD50 (Mouse) 1230 mg/kg Oral LD50 (Rat) 400 mg/kg Oral LD50 (Rat) 470 mg/kg Oral LD50 (Rat) 530 mg/kg Oral LD50 (Rat) 917 mg/kg Oral LD50 (Rabbit) 320 mg/kg Oral LD50 (Guinea Pig) 1200 mg/kg Dermal LD50 (Rabbit) 220 mg/kg Dermal LD50 (Rabbit) 99 mg/kg Inhalation LC50 (Rat) 450 ppm/4H Inhalation LC50 (Mouse) 700 ppm/7H Inhalation LC50 (Mouse) 3380 mg/m ³ /7H Inhalation LC50 (Rat) 2900 mg/m ³ /7H
Distillates (petroleum), Hydrotreated Light 64742-47-8	10-30	Oral LD50 > 5000 mg/kg (Rat) Dermal LD50 > 3000 mg/kg (Rabbit)
D-limonene 5989-27-5	10-30	Oral LD50 (Rat) = 4400 mg/kg Dermal LD50 (Rabbit) > 2000 mg/kg
Poly(oxy-1,2-ethanediyl),alpha-(4-nonylphenyl)-omega-hydroxy-,branched 127087-87-0	5-10	Oral LD50 (Rat) 2590 mg/kg Dermal LD50 (Rabbit) 2830 mg/kg

Note: The Stoddard Solvent contains Ethyl Benzene, CAS# 100-41-4(<0.2%), Naphthalene, CAS# 91-20-3(<0.5%), 1,2,4 Trimethyl Benzene, CAS# 95-63-6(<4%) and Xylenes, CAS#1330-20-7(<0.9%) as part of it's composition. Ingredients not precisely identified are non hazardous or below the ingredient disclosure limit.

3. HAZARDS IDENTIFICATION

Potential Acute Health Effects:

Eye Contact: May cause severe eye irritation. Symptoms include pain, redness and tearing. May cause corneal injury. Effects may be slow to heal.

Skin Contact: Causes skin irritation. Repeated or prolonged contact may cause defatting and drying of skin which may result in skin irritation and dermatitis. Contains a component which is a known or suspected skin sensitizer.

Inhalation: Causes irritation of the lungs and respiratory tract. High vapour/aerosol concentrations (attainable at elevated temperatures well above ambient) are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects.

Ingestion: Harmful if swallowed. May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation. Aspiration hazard! Small amounts aspirated into the lungs during ingestion or vomiting may cause lung injury, possibly leading to death. Symptoms of aspiration into the lungs include coughing, gasping, choking, shortness of breath, bluish discolored skin, rapid breathing and heart rate. Chemical pneumonitis from aspiration may result in fever. Pulmonary edema or bleeding, drowsiness, confusion, coma and seizures may occur in more serious cases. Symptoms may develop immediately or as late as 24 hours after the exposure, depending on how much chemical entered the lungs.

4. FIRST AID MEASURES

Eye Contact: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Get medical attention. Remove contaminated clothing and laundry before reuse.

Inhalation: Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Notes to Physician: Treatment based on sound judgment of physician and individual reactions of patient. Any material aspirated during vomiting may cause lung injury. Therefore, emesis should not be induced mechanically or pharmacologically. If it is considered necessary to evacuate the stomach contents, this should be done by means least likely to cause aspiration (e.g. gastric lavage after endotracheal intubation). Exposed person should be observed for 24 - 48 hours for delayed onset of pulmonary edema.

5. FIRE FIGHTING MEASURES

Flash Point: 43 °C / 109 °F (D'limonene)

Flash Point Method: Product not tested - using lowest flashing component.

Autoignition Temperature: 237°C /458 °F(D'limonene)

Flammable Limits in Air (%): Lower: 0.7% Upper: 12.7%

Extinguishing Media: Use DRY chemicals, CO2, alcohol foam or water spray.

Special Exposure Hazards: Flammable Liquid. Isolate and restrict area access. Stop leak only if safe to do so. Move containers from fire area if you can do it without risk. Fight fire from a safe distance and from a protected location. Use flooding quantities of water for fire and water spray or fog for vapours. Containers exposed to intense heat from fires should be cooled with water to prevent vapour pressure build-up which could result in container rupture. This material may produce a floating fire hazard in extreme fire conditions. This product can produce flammable vapors which may travel to a source of ignition and flash back. Do not direct a solid stream of water or foam into burning molten material; this may cause spattering and spread the fire.

Hazardous Decomposition/Combustion Materials (under fire conditions): Toxic fumes. Carbon monoxide. Carbon dioxide. Smoke.

Special Protective Equipment: Fire fighters should wear full protective clothing, including self-contained breathing equipment.

NFPA RATINGS FOR THIS PRODUCT ARE: HEALTH 3, FLAMMABILITY 2, INSTABILITY 0

HMS RATINGS FOR THIS PRODUCT ARE: HEALTH 3, FLAMMABILITY 2, REACTIVITY 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures: Wear appropriate protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Environmental Precautionary Measures: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. Consult local authorities.

Procedure for Clean Up: Isolate hazard area and restrict access. Stop leak only if safe to do so. Remove ignition sources and work with non-sparking tools. Small spills: soak up with absorbent material and scoop into containers. Large spills : prevent contamination of waterways. Dike and pump into suitable containers. Clean up residual with absorbent material, place in appropriate container and flush with water. Spilled material may cause floors and contact surfaces to become slippery.

7. HANDLING AND STORAGE

Handling: For industrial use only. Handle and open containers with care. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid inhalation of chemical. DO NOT handle or store near an open flame, heat, or other sources of ignition. Fixed equipment as well as transfer containers and equipment should be grounded to prevent accumulation of static charge. DO NOT pressurize, cut, heat, or weld containers. Empty containers may contain hazardous product residues. Keep the containers closed when not in use. Protect against physical damage. Use appropriate personnel protective equipment. Spilled material may be slippery.

Storage: Store in a cool, dry, well ventilated area, away from heat and ignition sources. Place away from incompatible materials. Store in accordance with good industrial practices. Store at ambient temperature. Keep away from direct sunlight. Store in original container. Prevent electrostatic charge buildup by using common bonding and grounding techniques. Store in accordance with good industrial practices.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Use process enclosure, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. Use explosion proof equipment.

Use explosion proof local exhaust ventilation with a minimum capture velocity of 100 ft/min (0.5 m/sec) at the point of vapour evolution.

Respiratory Protection: If exposure exceeds occupational exposure limits, use an appropriate NIOSH approved respirator. In case of spill or leak resulting in unknown concentration, use a NIOSH approved supplied air respirator.

Gloves:

Appropriate chemical resistant gloves should be worn.

NOTE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials as well as the instructions/specifications provided by the glove supplier.

Skin Protection: Skin contact should be prevented through the use of suitable protective clothing, gloves and footwear, selected for conditions of use and exposure potential. Consideration must be given both to durability as well as permeation resistance.

Eyes: Chemical goggles; also wear a face shield if splashing hazard exists.

Other Personal Protection Data: Ensure that eyewash stations and safety showers are proximal to the work-station location.

Ingredients	Exposure Limit - ACGIH	Exposure Limit - OSHA	Immediately Dangerous to Life or Health - IDLH
Stoddard Solvent	100 ppm TLV-TWA	100 ppm TWA 525 mg/m ³ TWA	20000 mg/m ³
Ethylene Glycol Monobutyl Ether	20 ppm (97 mg/m ³) TLV-TWA	50 ppm (240 mg/m ³), skin, PEL-TWA	700 ppm
Distillates (petroleum), Hydrotreated Light	Manufacturer Recommends: a TWA of 1200 mg/m ³ (197 ppm) based on total hydrocarbon.	Not available.	Not Available.
D-limonene	Not available.	Not available.	Not Available.
Poly(oxy-1,2-ethanediyl),alpha-(4-nonylphenyl)-omega-hydroxy-,branched	Not available.	Not available.	Not Available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.

Colour: Colourless

Odour: Characteristic.

pH Not Available.

Specific Gravity: 0.8440

Boiling Point: >165°C />329°F

Freezing/Melting Point: <-54°C / <-65°F

Vapour Pressure: Not Available.

Vapour Density: Not Available.

% Volatile by Volume: Not Available.

Evaporation Rate: Not Available.

Solubility: Negligible in water.

VOCs: Not Available. **Viscosity:**

Not Available. **Molecular Weight:**

Not Available. **Other:** Not

Available.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable.

Hazardous Polymerization: Will not occur.

Conditions to Avoid: Avoid excessive heat, open flames and all ignition sources. Incompatible materials.

Materials to Avoid: Strong oxidizing agents. Strong acids. Strong bases. Materials reactive with hydroxyl compounds.

Hazardous Decomposition Products: Carbon monoxide. Carbon dioxide. Smoke. Aldehydes. Ketones. Unidentified organic compounds.

Additional Information:

No additional remark.

11. TOXICOLOGICAL INFORMATION

Principle Routes of Exposure

Ingestion: Harmful if swallowed. May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation. Aspiration hazard! Small amounts aspirated into the lungs during ingestion or vomiting may cause lung injury, possibly leading to death. Symptoms of aspiration into the lungs include coughing, gasping, choking, shortness of breath, bluish discolored skin, rapid breathing and heart rate. Chemical pneumonitis from aspiration may result in fever. Pulmonary edema or bleeding, drowsiness, confusion, coma and seizures may occur in more serious cases. Symptoms may develop immediately or as late as 24 hours after the exposure, depending on how much chemical entered the lungs.

Skin Contact: Causes skin irritation. Repeated or prolonged contact may cause defatting and drying of skin which may result in skin irritation and dermatitis. Contains a component which is a known or suspected skin sensitizer.

Inhalation: Causes irritation of the lungs and respiratory tract. High vapour/aerosol concentrations (attainable at elevated temperatures well above ambient) are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects.

Eye Contact: May cause severe eye irritation. Symptoms include pain, redness and tearing. May cause corneal injury. Effects may be slow to heal.

Additional Information: Excessive exposure to ethylene glycol monobutyl ether may cause hemolysis, thereby impairing the blood's ability to transport oxygen. Repeated exposure may cause red blood cell hemolysis, leading to possible kidney and liver damage. Long term exposure of xylene may cause nervous system effects with symptoms such as headaches, irritability, depression, insomnia, agitation, extreme tiredness, tremors, impaired concentration and short term memory. The blood platelet count may be reduced on exposure to xylene which is reversible when exposure is stopped. Repeated contact can produce dermatitis (dryness and cracking). Chronic inhalation exposure to xylene causes mid-frequency hearing loss in laboratory animals. Xylene reacts synergistically with n-hexane to enhance hearing loss. Reduced body weight was observed in male rats during one test.

Naphthalene caused gene mutations in mammalian and bacterial cells. It has also caused the formation of cataracts in experimental animals. Inhalation has caused tumors and non-neoplastic lesions in experimental animals. Significant Data with Possible Relevance to Humans: In two-year feeding studies, the 4-mole ethoxylate of nonylphenol (NPE4) at doses of 200 mg/kg/day or 40 mg/kg/day in rats and dogs, respectively, produced no significant effects. The 9-mole ethoxylate (NPE9) at doses of 140 or 30 mg/kg/day in the diet of rats or dogs, respectively, produced no adverse effects. Parameters evaluated included body and organ weights and histopathology of 28 tissues. A dose of 1000 mg/kg/day of NPE9 resulted in reduced body weights and enlarged livers in rats and reduced weight, emesis, and minimal blood changes in dogs. A dose of 88 mg/kg/day NPE9 produced increased liver to body weight ratios in dogs which was attributed to decreased food consumption. Rats fed dietary concentrations of a related alkylphenol ethoxylate, the 40-mole ethoxylate of octylphenol (OPE40), up to 14000 ppm (700 mg/kg/day) for two years showed no adverse effects on growth or survival, feed consumption, hematologic values, urine measurements, organ weights or histopathologic lesions.

Acute Test of Product:

Acute Oral LD50: Not Available.

Acute Dermal LD50: Not Available.

Acute Inhalation LC50: Not Available.

Carcinogenicity:

Ingredients	IARC - Carcinogens	ACGIH - Carcinogens
Stoddard Solvent	Not listed.	Not listed.
Ethylene Glycol Monobutyl Ether	Group 3	A3
Distillates (petroleum), Hydrotreated Light	Not listed.	Not listed.
D-limonene	Group 3	Not listed.
Poly(oxy-1,2-ethanediyl),alpha-(4-nonylphenyl)-omega-hydroxy-,branched	Not listed.	Not listed.

Carcinogenicity Comment: This product contains ethylbenzene. The International Agency for Research on Cancer has evaluated ethylbenzene and classified it as a possible human carcinogen (Group 2B) based on sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans. This product contains naphthalene. The International Agency for Research on Cancer evaluated naphthalene and concluded that there was sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans. Accordingly, IARC classified naphthalene as a possible human carcinogen (Group 2B).

Reproductive Toxicity/ Teratogenicity/ Embryotoxicity/ Mutagenicity: Ethylene glycol monobutyl ether did not cause birth defects in animals; other effects were seen in the fetus only at doses that caused toxic effects to the mother.

Although abnormal sperm were observed after an interperitoneal injection in rats, xylene did not produce reproductive effects. An increase in menstrual disorders has been reported in women exposed to organic solvents but it is not possible to attribute this to xylene alone. Xylene has produced fetotoxic effects (delayed ossification and behavioural effects) in animals, in the absence of maternal toxicity. One study found that significant fetal effects at doses that did not cause high maternal toxicity included reduced fetal weight and increased incidence of malformed fetuses. In other studies where rats and mice were exposed by inhalation or ingestion, harmful effects in the offspring (teratogenicity, embryotoxicity and/or fetotoxicity) were either not observed or were observed in the presence of significant harmful effects in the mothers. There have been a few studies investigating the mutagenic potential of xylenes. These studies (induction of sister chromatid exchanges and chromosomal aberrations in human lymphocytes (white blood cells)) were negative.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

Ingredients	Ecotoxicity - Fish Species Data	Acute Crustaceans Toxicity:	Ecotoxicity - Freshwater Algae Data
Stoddard Solvent	Not Available.	Not Available.	Not Available.
Ethylene Glycol Monobutyl Ether	LC50 96 h (Lepomis macrochirus) 1490 mg/L static LC50 96 h (Lepomis macrochirus) 2950 mg/L	Not Available.	Not Available.
Distillates (petroleum), Hydrotreated Light	LC50 96 h (Pimephales promelas) 45 mg/L flow-through LC50 96 h (Lepomis macrochirus) 2.2 mg/L static LC50 96 h (Oncorhynchus mykiss) 2.4 mg/L static	Not Available.	Not Available.
D-limonene	LC50 96 h (Pimephales promelas) 0.619-0.796 mg/L flow-through LC50 96 h (Oncorhynchus mykiss) 35 mg/L	Not Available.	Not Available.
Poly(oxy-1,2-ethanediyl),alpha-(4-nonylphenyl)-omega-hydroxy-,branched	Not Available.	Not Available.	Not Available.

Other Information:

Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams or public waterways. Block off drains and ditches. Spill areas must be cleaned and restored to original condition or to the satisfaction of authorities. May be harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

Disposal of Waste Method: Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations.

Contaminated Packaging: Empty containers should be recycled or disposed of through an approved waste management facility.

14. TRANSPORT INFORMATION

DOT (U.S.):

DOT Shipping Name: FLAMMABLE LIQUID N.O.S. (D'LIMONENE)

DOT Hazardous Class 3

DOT UN Number: UN1993

DOT Packing Group: III

DOT Reportable Quantity (lbs): Not Available.

Note: This product is regulated as a hazardous material according to the Department of Transport in bulk quantities (greater than 119 gallons per package) only.

Marine Pollutant: No.

TDG (Canada):

TDG Shipping Name: FLAMMABLE LIQUID, N.O.S. (D'LIMONENE)

Hazard Class: 3

UN Number: UN1993

Packing Group: III

Note: Not regulated under the Transportation of Dangerous Goods Act when transported by road or rail in packagings or containers of 450 L or less (waste excluded).

Marine Pollutant: No.

15. REGULATORY INFORMATION

U.S. TSCA Inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

Note: Not available.

U.S. Regulatory Rules

Ingredients	CERCLA/SARA - Section 302:	SARA (311, 312) Hazard Class:	CERCLA/SARA - Section 313:
Stoddard Solvent	Not Listed.	Not Listed.	Not Listed.
Ethylene Glycol Monobutyl Ether	Not Listed.	Not Listed.	Not Listed.
Distillates (petroleum), Hydrotreated Light	Not Listed.	Not Listed.	Not Listed.
D-limonene	Not Listed.	Not Listed.	Not Listed.
Poly(oxy-1,2-ethanediyl),alpha-(4-nonylphenyl)-omega-hydroxy-,branched	Not Listed.	Not Listed.	Not Listed.

California Proposition 65: Listed.

MA Right to Know List: Listed.

New Jersey Right-to-Know List: Listed.

Pennsylvania Right to Know List: Listed.

WHMIS Hazardous Class:

B3 COMBUSTIBLE LIQUIDS

D1A VERY TOXIC MATERIALS

D2B TOXIC MATERIALS



16. OTHER INFORMATION

Additional Information:

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Disclaimer:

NOTICE TO READER:

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Do not use ingredient information and/or ingredient percentages in this MSDS as a product specification. For product specification information refer to a Product Specification Sheet and/or a Certificate of Analysis. These can be obtained from your local Relay Distributing Sales Office.

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*****END OF MSDS*****

