



DIOCTYL PHTHALATE (DOP)

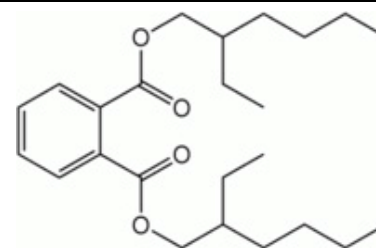
Chemical Formula: $C_{24}H_{38}O_4$

CAS Registry Number: 117-81-7

Molecular Weight: 390.56

Category: Plasticers

PRODUCT INFORMATION



Synonyms:

- 1,2-Benzenedicarboxylic acid, bis(2-ethyl-hexyl) ester
- 1,2-Benzenedicarboxylic acid bis(2-ethylhexyl) ester
- 1,2-Benzenedicarboxylic acid, 1,2-bis(2-ethylhexyl) ester
- 1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester
- 1,2-Benzenedicarboxylic acid, bis(2-ethylhexylester)
- 2-Ethylhexyl phthalate
- 3315AF2
- Bis(2-ethylhexyl) 1,2-benzenedicarboxylate
- Bis(2-ethylhexyl) o-phthalate
- bis(2-ethylhexyl) phthalate
- Bis(2-ethylhexyl)phthalat
- Bis-(2-ethylhexyl)phthalate
- Bis(2-ethylhexyl)phthalate
- Bisoflex 81
- Bisoflex DOP
- Compound 889
- Corflex 400
- DEHP
- Di(2-ethylhexyl) phthalate
- Di(2-ethylhexyl) phthalate (DEHP)
- Di(2-ethylhexyl)phthalate
- Di(isooctyl) phthalate
- Di-2-ethylhexylphthalate
- Di-2-ethylhexyl phthalate
- DI-2-ETHYLHEXYL-PHTHALATE
- Diacizer DOP
- Diethylhexyl phthalate
- DIOCTYL PHTHALATE
- Dioctylphthalate
- DOF
- DOF (Russian plasticizer)
- DOP
- Ergoplast FDO
- Ergoplast FDO-S

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Physical and Chemical Properties

Appearance: Clear oily liquid.

Odor: Slightly amine to odorless.

Solubility: Insoluble in water.

Specific Gravity: 0.9861 @ 20°C/20°C

pH: No information found.

% Volatiles by volume @ 21°C (70°F): No information found.

Boiling Point: 230°C (446°F)

Melting Point: -50°C (-58°F)

Vapor Density (Air=1): 16

Vapor Pressure (mm Hg): 1.32 @ 200°C (392°F)

Evaporation Rate (BuAc=1): No information found.

Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Nitrates, strong oxidizers, acids and alkalis.

Conditions to Avoid:

Heat, flames, ignition sources and incompatibles.

Hazards Identification

Emergency Overview

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS THE CENTRAL NERVOUS SYSTEM, LIVER, REPRODUCTIVE SYSTEM, AND GASTROINTESTINAL TRACT. POSSIBLE CANCER HAZARD. MAY CAUSE CANCER BASED ON ANIMAL DATA. Risk of cancer depends on duration and level of exposure. MAY CAUSE ADVERSE REPRODUCTIVE EFFECTS.

Health Rating: 2 - Moderate (Cancer)

Flammability Rating: 1 - Slight

Reactivity Rating: 1 - Slight

Contact Rating: 2 - Moderate

Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

Storage Color Code: Green (General Storage)

Potential Health Effects

Inhalation:

The low vapor pressure of this material essentially eliminates inhalation hazards unless the material is heated or misted. Inhalation of mists can cause nausea and is irritating to the respiratory tract.

**Ingestion:**

Ingestion causes nausea, abdominal cramps, diarrhea. CNS depression - lethargy, drowsiness, staggering and sleepiness - can result from absorbing large amounts.

Skin Contact:

Slight skin irritation may occur from prolonged skin contact. Low levels may be absorbed through the skin.

Eye Contact:

Causes irritation, redness, and pain.

Chronic Exposure:

Material is a suspected carcinogen and a suspected teratogen.

Aggravation of Pre-existing Conditions:

No information found.

First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Do NOT induce vomiting. Give large amounts of water. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Fire Fighting Measures

Fire:

Flash point: 215°C (419°F) OC

Autoignition temperature: 390°C (734°F)

Flammable limits in air % by volume:

lel: 0.3

Slight fire hazard.

Explosion:

Above the flash point, explosive vapor-air mixtures may be formed.

Fire Extinguishing Media:

Water spray, dry chemical, alcohol foam, or carbon dioxide.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Accidental Release Measures



Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container

Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Wear special protective equipment (Sec. 8) for maintenance break-in or where exposures may exceed established exposure levels. Wash hands, face, forearms and neck when exiting restricted areas. Shower, dispose of outer clothing, change to clean garments at the end of the day. Avoid cross-contamination of street clothes. Wash hands before eating and do not eat, drink, or smoke in workplace. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

Exposure Controls/Personal Protection

Airborne Exposure Limits:

- OSHA Permissible Exposure Limit (PEL):

5 mg/m³ (TWA).

- ACGIH Threshold Limit Value (TLV):

5 mg/m³ (TWA); A3 - animal carcinogen.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece particulate respirator (with NIOSH type P100 or R100 filters) may be worn for up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. Please note that N series filters are not recommended for this material. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. Where respirators are required, you must have a written program covering the basic requirements in the OSHA respirator standard. These include training, fit testing, medical approval, cleaning, maintenance, cartridge change schedules, etc. See 29CFR1910.134 for details.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.



Ecological Information

Environmental Fate:

When released into water, this material may biodegrade to a moderate extent. This material may bioaccumulate to some extent. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition.

Environmental Toxicity:

The LC50/96-hour values for fish are over 100 mg/l.

Other Information

NFPA Ratings: Health: 1 Flammability: 1 Reactivity: 0

Label Hazard Warning:

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS THE CENTRAL NERVOUS SYSTEM, LIVER, REPRODUCTIVE SYSTEM, AND GASTROINTESTINAL TRACT. POSSIBLE CANCER HAZARD. MAY CAUSE CANCER BASED ON ANIMAL DATA. Risk of cancer depends on duration and level of exposure. MAY CAUSE ADVERSE REPRODUCTIVE EFFECTS.

Label Precautions:

Do not get in eyes, on skin, or on clothing.

Do not breathe mist.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

Label First Aid:

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.
