SAFETY DATA SHEET

DI OCTYL PHTHALATE (DOP)

CAS No.: 117-81-7

This Safety Data Sheet is issued by Suraj Chemicals as the distributor/supplier of record, based on manufacturer and published GHS / regulatory reference data for this substance. Users should also consult the specific manufacturer's SDS where available.

1. IDENTIFICATION

GHS Product identifier

DI OCTYL PHTHALATE (DOP)
Bis(2-ethylhexyl) phthalate; DEHP
CAS: 117-81-7

Other means of identification

Not relevant

Recommended use of the chemical and restrictions on use

Relevant uses: General-purpose plasticizer for PVC and other resins (cables, flooring, film, hoses, artificial leather). For industrial user only. Use in toys, childcare articles, cosmetics and food-contact materials is restricted/prohibited in many jurisdictions.

Uses advised against: All uses not specified in this section or in section 7.3.

Supplier's details

SURAJ CHEMICALS
No 92, Govindappa Naicken Street, Shiva Complex, Chennai – 600001, Tamil Nadu, India
Tel: +91 - 7092722822, +91 - 9840284032 / +91 - 44 - 25393652, 42130281
Email: sales@surajchemicals.com | Website: www.surajchemicals.com
GST No: 33ACEPV8190L1ZZ

Emergency phone number

Emergency Contact No: +91 - 7092722822, +91 - 9840284032

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Repr. 1B	Reproductive toxicity, Category 1B, H360FD

GHS label elements, including precautionary statements

GHS: Danger

Hazard statements

H360FD – May damage fertility. May damage the unborn child.

Precautionary statements

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P264: Wash exposed skin thoroughly after handling.
P280: Wear protective gloves/eye protection.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P405: Store locked up.
P501: Dispose of contents/container in accordance with hazardous-waste regulations.

Other hazards which do not result in classification

Regulatory restrictions apply in several jurisdictions (e.g. EU REACH Annex XIV/XVII SVHC status, restricted in toys/childcare articles, food-contact materials and cosmetics).

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances

Chemical description: Dioctyl Phthalate (Bis(2-ethylhexyl) phthalate)

In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 117-81-7	Dioctyl Phthalate (DEHP) — Repr. 1B: H360FD – Danger	≥99%

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

Mixtures

Non-applicable

4. FIRST AID MEASURES

Description of necessary first-aid measures

Request medical assistance immediately, showing the SDS of this product.

By inhalation

Remove the affected person to fresh air. Seek medical attention if discomfort persists.

By skin contact

Remove contaminated clothing. Wash skin thoroughly with soap and water.

By eye contact

Rinse eyes thoroughly with water for several minutes. Seek medical attention if irritation persists.

By ingestion/aspiration

Rinse mouth with water. Do not induce vomiting. Seek medical attention.

Most important symptoms/effects, acute and delayed	Acute and delayed effects are indicated in sections 2 and 11.
Indication of immediate medical attention and special treatment needed, if necessary	Women who are pregnant or planning pregnancy, and their supervisors, should be made aware of the reproductive/developmental hazard (H360FD) before handling this product.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Suitable: Dry chemical powder, carbon dioxide (CO2), foam, water spray/fog.
Unsuitable: None known.

Specific hazards arising from the chemical

Combustible liquid with a very high flash point; not readily ignitable under normal conditions.

Special protective actions for fire-fighters

Evacuate all non-essential personnel. Intervention only by capable personnel who are trained and aware of the hazards of the product. In all cases wear self-contained breathing apparatus and full protective clothing.

Additional provisions

If safe to do so, remove the exposed containers, or cool with large quantities of water spray from a safe/protected position. Approach from upwind. Contain fire-fighting water for later disposal; it must not enter drains or watercourses.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Eliminate all sources of ignition. Ensure adequate ventilation. Personal protection equipment must be used against potential contact with the spilt product (see section 8). Evacuate the area and keep out those who do not have protection.

For emergency responders

Wear protective equipment as per section 8. Keep unprotected persons away.

Environmental precautions

Avoid at all cost any type of spillage into an aqueous medium, drains or soil. Contain the product absorbed appropriately in hermetically sealed containers. Notify the relevant authority in case of exposure to the general public or the environment.

Methods and materials for containment and cleaning up

Contain spillage with inert absorbent material. Collect into suitable closed containers for disposal. Avoid creating slip hazards – product is oily.

Reference to other sections

See sections 8 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling

A. General precautions for safe use

Avoid skin and eye contact and inhalation of mist/vapour during heated processing. Use in well-ventilated areas.

B. Technical recommendations for the prevention of fires and explosions

Keep away from strong oxidising agents and open flame during heated processing.

C. Technical recommendations on general occupational hygiene

Do not eat, drink or smoke during the process; wash hands and exposed skin afterwards with suitable cleaning products.

D. Technical recommendations to prevent environmental risks

Provide bunded/contained storage. Avoid atmospheric emissions and discharge to drains. Follow the protective measures given in the exposure controls/personal protection section.

Conditions for safe storage, including any incompatibilities

A. Specific storage requirements

Minimum Temp.	5°C
Maximum Temp.	35°C
Maximum time	24 Months (unopened, original container)

B. General conditions for storage

Store in a cool, dry, well-ventilated place away from strong oxidisers, strong acids and strong bases. Keep container tightly closed.

Specific end use(s)

Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Substances whose occupational exposure limits have to be assessed in the workplace, per the Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987):

Identification	Occupational Exposure Limit Type	Value
Dioctyl Phthalate (DEHP) CAS: 117-81-7	Time Weighted average concentration (8 hrs) – ACGIH TLV	5 mg/m³

Appropriate engineering controls

It is recommended to use localized extraction/general ventilation in the work area as a collective protection measure to avoid exceeding occupational exposure limits, in addition to individual protective equipment (PPE) as needed. Consult the manufacturer's information leaflet for storage, use, cleaning and maintenance of PPE.

B. Respiratory protection

Not normally required under ambient conditions with adequate ventilation; use dust/mist respirator during heated processing.

C. Specific protection for the hands

Chemical-resistant gloves (nitrile rubber).

D. Eye and face protection

Chemical safety goggles/panoramic glasses against splash/projections. Use if there is a risk of splashing.

E. Bodily protection

Standard protective clothing appropriate to the task.

F. Additional emergency measures

Emergency shower (ANSI Z358-1, ISO 3864-1:2011, ISO 3864-4:2011) and eyewash stations (DIN 12 899, ISO 3864-1:2011, ISO 3864-4:2011) should be available.

Environmental exposure controls

Avoid environmental spillage of both the product and its container. See subsection 7.1.D.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	
Physical state at 20°C	Liquid
Appearance	Clear, oily liquid
Color	Colourless to pale yellow
Odor	Practically odourless
Odour threshold	Not established
Volatility	
Boiling point at atmospheric pressure	385°C
Vapour pressure at 20°C	<0.001 kPa (negligible)
Evaporation rate at 20°C	Negligible
Product Description	
Density / Relative density at 20°C	0.981–0.986 g/cm³
Dynamic viscosity at 20°C	~55 mPa·s
Concentration	≥99%
pH	Not relevant (non-aqueous)
Vapour density (air = 1)	13.5
Partition coefficient n-octanol/water (log Pow)	7.6
Solubility in water at 20°C	<1 mg/L (practically insoluble)
Decomposition temperature	Not established
Melting point/freezing point	-50°C
Flammability	
Flash Point	196°C (closed cup)
Flammability (solid, gas)	Non-applicable (liquid)
Autoignition temperature	~380°C
Lower / Upper flammability limit	Not established
Particle Characteristics	
Median equivalent diameter	Non-applicable (liquid)

** Not relevant/not established due to the nature of the product or grade.*

Other information

Explosive properties	Not classified as explosive
Oxidising properties	Not classified as oxidising
Corrosive to metals	Not corrosive to metals
Heat of combustion	Not established
Surface tension at 20°C	Not established
Refraction index	1.485

10. STABILITY AND REACTIVITY

Reactivity
No particular reactivity hazard under normal conditions of use.

Chemical stability
Chemically stable under the indicated conditions of storage, handling and use.

Possibility of hazardous reactions
Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

Conditions to avoid

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Stable	Avoid strong heat (fume risk)	No particular hazard	Stable, slowly hydrolyses under strong acid/base at elevated temperature

Incompatible materials
Strong oxidising agents, strong acids and strong bases.

Hazardous decomposition products
Combustion/thermal decomposition may generate carbon monoxide, carbon dioxide and irritant fumes.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

In case of exposure that is repetitive, prolonged, or at concentrations higher than the recommended occupational exposure limits, adverse health effects may result depending on the means of exposure:

A. Ingestion (acute effect)

Low acute oral toxicity; not classified for acute toxicity. Repeated high-dose ingestion is associated with reproductive/developmental and hepatic effects in animal studies (H360FD).

B. Inhalation (acute effect)

Negligible vapour pressure limits inhalation exposure under normal conditions; mists/aerosols during heated processing may cause mild respiratory irritation.

C. Contact with skin and eyes (acute effect)

Not classified as an irritant to skin or eyes based on available data.

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity)

Repr. 1B, H360FD – based on animal reproductive/developmental toxicity studies (testicular/reproductive effects, developmental toxicity). Classified by IARC as Group 3 (not classifiable as to carcinogenicity to humans) / some regulatory bodies list as a probable/possible carcinogen based on rodent data of limited relevance to humans; not classified as a mutagen based on available data.

E. Sensitizing effects

Classification criteria for respiratory or skin sensitisation are not met based on available data.

F. Specific target organ toxicity (STOT) – single exposure

Classification criteria are not met based on available data.

G. Specific target organ toxicity (STOT) – repeated exposure

Repeated high-dose exposure in animal studies has been associated with liver effects; classification criteria for STOT RE are not met at the substance's harmonised classification level based on available data.

H. Aspiration hazard

Classification criteria are not met based on available data.

Product-specific toxicological information

Identification	Acute Toxicity	Genus
Dioctyl Phthalate (DEHP) CAS: 117-81-7	LD50 oral: >25000 mg/kg (approx.)	Rat
	LD50 dermal: >20000 mg/kg (approx.)	Rabbit

12. ECOLOGICAL INFORMATION

Not classified as acutely hazardous to the aquatic environment; very low water solubility limits bioavailability.

Toxicity

Identification	Acute Toxicity	Species	Genus
Dioctyl Phthalate (DEHP) CAS: 117-81-7	LC50: >0.5 mg/L (96h, approx., limit of solubility)	Non-applicable	Fish
	EC50: >1 mg/L (48h, approx.)	Daphnia magna	Crustacean

Persistence and degradability

Not readily biodegradable by standard test criteria but degrades under environmentally relevant conditions; adsorbs strongly to sediment/soil.

Bioaccumulative potential

High theoretical bioaccumulation potential (log Pow ~7.6) but is rapidly metabolised by fish and higher organisms, limiting actual bioaccumulation (BCF generally low in vivo).

Mobility in soil

Koc	Henry	Dry Soil	Moist Soil
Very high (very low soil/sediment mobility)	Very low	Immobile	Immobile

Results of PBT and vPvB assessment

Identified as a Substance of Very High Concern (SVHC) under EU REACH on the basis of reproductive toxicity (Repr. 1B); not classified as PBT/vPvB by standard criteria.

Other adverse effects

Not described

13. DISPOSAL CONSIDERATIONS

Disposal methods

Do not discharge to drains or watercourses. Dispose of via a licensed hazardous-waste contractor (incineration) in accordance with local regulations.

Refer to national and local regulations on hazardous waste management (Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, as amended).

14. TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR 2023 / RID 2023, India: Motor Vehicles Act / CMVR)

14.1 UN number	Not regulated
14.2 UN proper shipping name	Not restricted for transport
14.3 Transport hazard class(es)	Non-applicable
14.4 Packing group	Non-applicable
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG 41-22)

14.1 UN number	Not regulated
14.2 UN proper shipping name	Not restricted for transport
14.3 Transport hazard class(es)	Non-applicable
14.4 Packing group	Non-applicable
14.5 Marine pollutant	No
14.6 Special precautions for user	Not classified as a dangerous good for sea transport.
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO 2024)

14.1 UN number	Not regulated
14.2 UN proper shipping name	Not restricted for transport
14.3 Transport hazard class(es)	Non-applicable
14.4 Packing group	Non-applicable
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances, in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation

Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)
The Petroleum Act, 1934 and Petroleum Rules, 2002 (where applicable to flammable liquids)
The Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996
Public Liability Insurance Act, 1991

16. OTHER INFORMATION

Legislation related to safety data sheets

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3

H360FD: May damage fertility. May damage the unborn child.

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

Advice related to training

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources

The United Nations Economic Commission for Europe (UNECE); ECHA classification and labelling inventory; publicly available substance-specific safety data references.

Abbreviations and acronyms

ADR: European agreement concerning the international carriage of dangerous goods by road | IMDG: International maritime dangerous goods code | IATA: International Air Transport Association | ICAO: International Civil Aviation Organisation | COD: Chemical Oxygen Demand | BOD5: 5-day biochemical oxygen demand | BCF: Bioconcentration factor | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | Log-POW: Octanol-water partition coefficient | Koc: Partition coefficient of organic carbon | IARC: International Agency for Research on Cancer | TWA: Time-weighted average | STEL: Short-term exposure limit

Disclaimer: The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

(This document is computer generated and therefore does not require any signature.)

+91 - 7092722822, +91 - 9840284032 | +91 - 44 - 25393652, 42130281
sales@surajchemicals.com | surajchemicals@yahoo.com
www.surajchemicals.com