



MATERIAL SAFETY DATA SHEET

DIETHYL PHTHALATE — DEP

SECTION 1 — IDENTIFICATION

1.1 Product identifier

Product Name:
Diethyl Phthalate

Abbreviation:
DEP

Chemical Name:
Diethyl Phthalate

IUPAC Name:
Diethyl benzene-1,2-dicarboxylate

Synonyms:

- Phthalic Acid Diethyl Ester
- Diethyl Ester of Phthalic Acid
- Ethyl Phthalate
- Diethyl o-Phthalate
- DEP Solvent

CAS Number:
84-66-2

EC Number:
201-550-6

Chemical Formula:
 $C_{12}H_{14}O_4$

Molecular Weight:
222.24 g/mol



Chemical Family:
Phthalate ester

Product Form:
Liquid

1.2 Relevant identified uses

Recommended industrial uses include:

- Industrial solvent
- Fragrance and perfume solvent
- Fragrance fixative
- Plasticizer
- Polymer-processing additive
- Coating and resin formulation
- Adhesive formulation
- Chemical intermediate
- Personal-care formulation, subject to applicable regulations
- Pharmaceutical coating and processing, subject to grade approval
- Specialty chemical manufacturing
- Insect-repellent formulation, where legally permitted

1.3 Uses advised against

- Any use contrary to applicable regulations
- Direct food or feed use unless specifically approved
- Pharmaceutical or cosmetic use unless the supplied grade meets the required purity and regulatory standards
- Uncontrolled environmental release
- Use without appropriate industrial hygiene controls
- Use in children's products without confirmation of applicable phthalate restrictions

1.4 Supplier information

Supplier:
BASEKIM KIMYASAL URUNLER IC VE DIS TIC. LTD. STI.

Website:
<https://basekim.com>

**Ankara Office:**

No. 6, Fahrettin Pasa St. (613), Ilkbahar, Cankaya, Ankara, Türkiye

Telephone:

+90 312 514 70 55

Istanbul Office:

No. 219, Sogut St., No. 20, T4A Block, Maslak, Sariyer, Istanbul, Türkiye

Telephone:

+90 212 807 22 33

Dubai Office:

No. 3509, The Burlington Tower, Business Bay, Dubai, United Arab Emirates

Telephone:

+971 4 236 98 30

Emergency Telephone:

To be assigned and verified by the supplier.

SECTION 2 — HAZARD IDENTIFICATION

2.1 Classification of the substance

Draft GHS classification

Serious Eye Damage/Eye Irritation — Category 2

Some regulatory inventories and supplier SDSs may treat high-purity Diethyl Phthalate as not classified. The final classification must be confirmed using the exact purity, impurity profile, available test data, and destination-country rules.

2.2 Label elements

Signal Word:

Warning

Hazard Pictogram:

GHS07 — Exclamation Mark



Hazard statement

- **H319:** Causes serious eye irritation.

Precautionary statements

Prevention

- **P264:** Wash hands and exposed skin thoroughly after handling.
- **P280:** Wear protective gloves and eye or face protection.

Response

- **P305 + P351 + P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **P337 + P313:** If eye irritation persists: Get medical advice or attention.

2.3 Other hazards

- Prolonged contact may cause mild skin irritation or dryness.
- Mist or heated vapor may irritate the nose, throat, and respiratory tract.
- Spilled liquid may create a slipping hazard.
- Combustible when strongly heated, although ignition is difficult at normal ambient temperatures.
- Combustion or thermal decomposition may produce irritating and toxic fumes.
- The substance has very low volatility under normal conditions.
- Product-specific PBT, vPvB, and endocrine-disrupting assessments must be verified for the destination market.

SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Component	CAS Number	EC Number	Concentration
Diethyl Phthalate	84-66-2	201-550-6	Typically ≥99%
Manufacturing impurities	Various	Various	Balance



The exact purity and impurity profile must be confirmed using the current product specification and Certificate of Analysis.

Any hazardous impurity present above an applicable disclosure threshold must be listed in the official supplier SDS.

SECTION 4 — FIRST-AID MEASURES

4.1 Eye contact

Immediately rinse the eyes cautiously with clean water for at least 15 minutes.

Hold the eyelids open and move the eyes in all directions while rinsing.

Remove contact lenses if present and easy to do.

Do not rub the eyes.

Obtain medical attention if redness, pain, tearing, or visual disturbance persists.

4.2 Skin contact

Remove contaminated clothing and footwear.

Wash the affected skin thoroughly with soap and plenty of water.

Obtain medical advice if irritation develops or persists.

Wash contaminated clothing before reuse.

4.3 Inhalation

Move the exposed person to fresh air.

Keep the person comfortable for breathing.

At normal temperatures, significant vapor exposure is unlikely because of the low vapor pressure. Mist or heated vapor may cause irritation.

Obtain medical attention if headache, dizziness, nausea, coughing, or breathing discomfort develops.



4.4 Ingestion

Rinse the mouth thoroughly with water.

Do not induce vomiting unless instructed by qualified medical personnel.

Never give anything by mouth to an unconscious person.

Give small amounts of water if the person is conscious and able to swallow.

Seek medical attention if a significant amount is swallowed or symptoms develop.

4.5 Most important symptoms and effects

Possible symptoms include:

- Eye irritation
- Redness
- Tearing
- Mild skin irritation
- Nose or throat irritation
- Headache
- Dizziness
- Nausea
- Weakness or fatigue after excessive exposure

4.6 Advice to physicians

Treat symptomatically.

No specific antidote is known.



SECTION 5 — FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media

Use:

- Alcohol-resistant foam
- Dry chemical powder
- Carbon dioxide
- Water fog or fine water spray

Use extinguishing media suitable for the surrounding fire.

5.2 Unsuitable extinguishing media

Do not use a direct high-pressure water jet because it may spread burning liquid.

5.3 Specific hazards

Diethyl Phthalate is a combustible liquid with a high flash point.

Ignition is difficult under ordinary ambient conditions, but the liquid may burn when strongly heated.

Closed containers may rupture when exposed to fire.

Hazardous combustion products may include:

- Carbon monoxide
- Carbon dioxide
- Irritating smoke
- Organic decomposition products

5.4 Firefighting procedures

Evacuate unnecessary personnel.

Approach the fire from upwind.

Cool fire-exposed containers with water spray.



Prevent contaminated firefighting water from entering drains or waterways.

5.5 Protective equipment for firefighters

Wear:

- Positive-pressure self-contained breathing apparatus
- Full protective firefighting clothing

SECTION 6 — ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions

- Restrict access to the affected area.
- Provide adequate ventilation.
- Avoid eye and skin contact.
- Avoid breathing mist or heated vapor.
- Wear suitable personal protective equipment.
- Remove ignition sources where the material is heated or a large spill has occurred.
- Exercise caution because the liquid may make surfaces slippery.

6.2 Environmental precautions

Prevent uncontrolled entry into:

- Drains
- Sewers
- Surface water
- Groundwater
- Soil

Notify the relevant authority where required by law.

6.3 Methods for containment

Stop the leak if this can be done safely.

Dike large spills with:



- Sand
- Earth
- Vermiculite
- Other inert, non-combustible material

6.4 Cleanup methods

Recover free liquid by pumping into compatible containers.

Absorb remaining liquid using:

- Sand
- Diatomaceous earth
- Vermiculite
- Universal chemical absorbent

Collect waste in sealed and properly labeled containers.

Wash residual contamination only where the resulting wastewater can be collected and appropriately treated.

Do not return contaminated recovered material to the original container.

SECTION 7 — HANDLING AND STORAGE

7.1 Precautions for safe handling

- Avoid contact with eyes, skin, and clothing.
- Avoid breathing mist or heated vapor.
- Use with adequate ventilation.
- Keep containers closed when not in use.
- Prevent spills and leaks.
- Do not eat, drink, or smoke in handling areas.
- Wash thoroughly after handling.
- Remove contaminated clothing before entering eating areas.
- Use appropriate transfer equipment.
- Avoid excessive heating.
- Avoid contamination with incompatible substances.



7.2 Conditions for safe storage

Store:

- In tightly closed, correctly labeled containers
- In a cool, dry, well-ventilated area
- Away from excessive heat
- Away from strong oxidizing agents
- Away from strong acids
- Away from food and animal feed
- Protected from physical damage and contamination

Keep the container upright.

Use secondary containment for bulk storage.

7.3 Suitable container materials

Potentially suitable materials include:

- Stainless steel
- Carbon steel
- Approved high-density polyethylene
- Glass for laboratory quantities
- Compatible lined containers

Compatibility of seals, gaskets, pumps, hoses, and coatings must be confirmed before use.



SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Occupational exposure limits

Common occupational guidelines include:

Authority	Exposure Limit
NIOSH REL	5 mg/m ³ , time-weighted average
ACGIH historical TLV	5 mg/m ³ , time-weighted average
California OSHA PEL	5 mg/m ³ , time-weighted average
Federal OSHA PEL	No substance-specific enforceable PEL listed

Applicable national occupational limits must be checked before use.

8.2 Engineering controls

Use adequate general ventilation.

Provide local exhaust ventilation where:

- Product is heated
- Mist or aerosol is generated
- Open transfer occurs
- Exposure may exceed applicable limits

Provide an accessible eyewash station.

A safety shower should be available for bulk-handling areas.

8.3 Eye and face protection

Wear safety glasses with side shields.

Use chemical splash goggles where splashing is possible.

Use a face shield in addition to goggles for high-volume transfer operations.



8.4 Hand protection

Wear chemical-resistant gloves selected using manufacturer permeation data.

Potentially suitable materials may include:

- Nitrile rubber
- Butyl rubber
- Neoprene
- Laminated barrier materials

Glove suitability depends on thickness, exposure duration, temperature, and task conditions.

8.5 Skin protection

Wear:

- Long-sleeved work clothing
- Chemical-resistant apron where splashing is likely
- Suitable protective footwear

8.6 Respiratory protection

Respiratory protection is normally unnecessary where adequate ventilation is maintained.

Where mist, aerosol, or heated vapor exceeds applicable exposure limits, use an approved respirator selected for the exposure conditions.

For unknown concentrations or oxygen-deficient atmospheres, use positive-pressure supplied-air respiratory protection or self-contained breathing apparatus.



SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

The following values are typical and are not guaranteed batch specifications.

Property	Typical Value
Physical state	Liquid
Appearance	Clear, colorless to water-white oily liquid
Odor	Very slight, mild aromatic odor
Chemical formula	$C_{12}H_{14}O_4$
Molecular weight	222.24 g/mol
Melting/freezing point	Approximately $-41^{\circ}C$
Boiling point	Approximately $295-298^{\circ}C$
Flash point	Approximately $140-161^{\circ}C$, method dependent
Flammability	Combustible liquid when strongly heated
Lower explosive limit	Approximately 0.7% by volume at elevated temperature
Upper explosive limit	Limited or method-dependent data
Vapor pressure at $25^{\circ}C$	Approximately 0.002 mmHg
Vapor density	Approximately 7.7, air = 1
Relative density	Approximately 1.11–1.12
Water solubility	Slight; approximately 0.1% at $25^{\circ}C$
Solubility in organic solvents	Soluble in alcohols, ethers, and many organic solvents
Partition coefficient	Approximately log Kow 2.4–2.5
Auto-ignition temperature	Approximately $450-460^{\circ}C$
Viscosity	Approximately 11–14 mPa·s at ambient temperature
Evaporation rate	Very low
pH	Not applicable
Explosive properties	Not classified as explosive
Oxidizing properties	Not oxidizing
Refractive index	Approximately 1.50 at $20^{\circ}C$



SECTION 10 — STABILITY AND REACTIVITY

10.1 Reactivity

No dangerous reaction is expected under recommended storage and handling conditions.

10.2 Chemical stability

Stable under normal ambient conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization is not expected.

May react with strong oxidizing agents.

Hydrolysis may occur under strongly acidic or alkaline conditions.

10.4 Conditions to avoid

Avoid:

- Excessive heat
- Flames
- Hot surfaces
- Contamination
- Contact with incompatible materials
- Prolonged heating

10.5 Incompatible materials

- Strong oxidizing agents
- Strong acids
- Nitric acid
- Permanganates
- Strong alkalis under severe conditions

10.6 Hazardous decomposition products

Thermal decomposition or combustion may produce:



- Carbon monoxide
- Carbon dioxide
- Irritating smoke
- Organic decomposition products

SECTION 11 — TOXICOLOGICAL INFORMATION

11.1 Likely routes of exposure

- Eye contact
- Skin contact
- Inhalation of mist or heated vapor
- Accidental ingestion

11.2 Acute toxicity

Diethyl Phthalate generally has low acute toxicity.

It is not expected to meet GHS acute-toxicity classification criteria based on commonly available data.

11.3 Skin corrosion or irritation

Not expected to be corrosive.

Prolonged or repeated exposure may produce mild irritation or dryness.

11.4 Serious eye damage or irritation

Direct contact may cause eye irritation, redness, pain, or tearing.

11.5 Respiratory effects

Low volatility limits inhalation exposure at ambient temperature.

Mist or heated vapor may irritate the nose, throat, and respiratory tract.



11.6 Sensitization

Not generally expected to cause respiratory or skin sensitization.

11.7 Germ-cell mutagenicity

Not expected to be classified as mutagenic based on available information.

11.8 Carcinogenicity

Diethyl Phthalate is not generally classified as a known human carcinogen.

OSHA's chemical database records historical classifications including ACGIH A4 and EPA Group D, indicating that available evidence was inadequate for classification as a human carcinogen.

11.9 Reproductive and developmental toxicity

Animal studies have reported reproductive or developmental effects at some exposure levels.

High-purity Diethyl Phthalate is not generally harmonized as a reproductive toxicant under EU CLP; however, unnecessary exposure should be minimized and destination-country requirements must be checked.

11.10 Specific target-organ toxicity

Excessive exposure may cause:

- Headache
- Dizziness
- Nausea
- Weakness
- Effects on the central or peripheral nervous system

The substance is not generally classified for specific target-organ toxicity based on standard commercial data.



11.11 Aspiration hazard

Not expected to meet aspiration-hazard classification criteria because of its viscosity and physical properties.

SECTION 12 — ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Diethyl Phthalate may affect aquatic organisms at sufficiently high concentrations.

Avoid uncontrolled environmental release.

12.2 Persistence and degradability

The substance is expected to biodegrade under suitable aerobic environmental conditions.

Degradation rates depend on temperature, microbial activity, and environmental conditions.

12.3 Bioaccumulative potential

Significant long-term bioaccumulation is not expected based on its moderate partition coefficient and environmental metabolism.

12.4 Mobility in soil

The product has limited water solubility but may migrate in soil following a large release.

It may adsorb to soil and organic matter.

12.5 PBT and vPvB assessment

The substance is not generally expected to meet PBT or vPvB criteria, subject to final supplier and regulatory assessment.

12.6 Endocrine-disrupting properties

Regulatory assessment of phthalates continues to develop.



The supplier must verify whether any jurisdiction-specific endocrine-disruptor identification or disclosure applies to the product and its intended use.

12.7 Other adverse effects

Large releases may affect wastewater-treatment systems and receiving waters.

SECTION 13 — DISPOSAL CONSIDERATIONS

13.1 Product disposal

Recover or recycle uncontaminated product where practical.

Dispose of waste through an authorized waste-management contractor.

Do not discharge into:

- Drains
- Sewers
- Surface water
- Groundwater
- Soil

Incineration in an authorized facility may be appropriate.

Waste classification must be based on:

- Product purity
- Contamination
- Intended disposal method
- Local regulations

13.2 Packaging disposal

Drain containers thoroughly.

Empty containers may retain product residue.

Do not reuse packaging unless it has been professionally cleaned and approved.

Recycle or dispose of packaging according to applicable regulations.



SECTION 14 — TRANSPORT INFORMATION

High-purity Diethyl Phthalate is generally not regulated as dangerous goods under standard international transport rules.

Transport Regulation	Classification
ADR/RID — Road and Rail	Not regulated
IMDG — Sea	Not regulated
ICAO/IATA — Air	Not regulated
ADN — Inland Waterways	Not regulated

UN Number:

Not assigned

UN Proper Shipping Name:

Not applicable

Transport Hazard Class:

Not applicable

Packing Group:

Not applicable

Marine Pollutant:

Generally no

Special precautions

- Transport in securely closed, compatible containers.
- Keep containers upright.
- Protect containers from excessive heat and physical damage.
- Prevent leakage.
- Verify national transport rules and the classification of any blended formulation.



SECTION 15 — REGULATORY INFORMATION

15.1 Regulatory framework

This draft is structured with reference to:

- Globally Harmonized System of Classification and Labelling of Chemicals
- OSHA Hazard Communication Standard, 29 CFR 1910.1200
- Regulation (EC) No. 1907/2006 — REACH
- Regulation (EC) No. 1272/2008 — CLP
- ADR
- RID
- IMDG Code
- ICAO Technical Instructions
- IATA Dangerous Goods Regulations

15.2 Chemical identification

CAS Number:

84-66-2

EC Number:

201-550-6

15.3 Regulatory considerations

Phthalate regulations differ according to:

- Country
- Product type
- Consumer or industrial use
- Cosmetic use
- Medical-device use
- Food-contact use
- Children's articles
- Toys
- Pharmaceutical use
- Environmental-discharge requirements

Users must confirm that Diethyl Phthalate is permitted for the intended application and market.



15.4 Chemical safety assessment

A product-specific chemical safety assessment was not available for preparation of this draft.

SECTION 16 — OTHER INFORMATION

Document control

Document Title:

Material Safety Data Sheet — Diethyl Phthalate

Product Abbreviation:

DEP

Revision Number:

1.0 Draft

Issue Date:

To be assigned

Supersedes:

New document

Prepared For:

BASEKIM

Prepared By:

Technical / Regulatory Department

Full hazard statement

H319: Causes serious eye irritation.

Abbreviations

- **ADR:** European Agreement concerning the International Carriage of Dangerous Goods by Road
- **CAS:** Chemical Abstracts Service
- **CLP:** Classification, Labelling and Packaging Regulation
- **DEP:** Diethyl Phthalate



- **EC:** European Community
- **GHS:** Globally Harmonized System
- **IATA:** International Air Transport Association
- **ICAO:** International Civil Aviation Organization
- **IMDG:** International Maritime Dangerous Goods Code
- **PBT:** Persistent, Bioaccumulative and Toxic
- **PPE:** Personal Protective Equipment
- **REACH:** Registration, Evaluation, Authorisation and Restriction of Chemicals
- **SDS:** Safety Data Sheet
- **TWA:** Time-Weighted Average
- **vPvB:** Very Persistent and Very Bioaccumulative

Manufacturer verification required

Before official publication, BASEKIM must verify:

1. Guaranteed Diethyl Phthalate purity.
2. Identity and concentration of manufacturing impurities.
3. Product-specific GHS and CLP classification.
4. Whether Eye Irritation Category 2 applies to the supplied grade.
5. Physical-property values against the current product specification.
6. Flash-point test method and guaranteed value.
7. Destination-country occupational exposure limits.
8. REACH registration and chemical-inventory status.
9. Application-specific restrictions for cosmetics, pharmaceuticals, food contact, medical devices, toys, and children's articles.
10. Transport status for the exact formulation.
11. Supplier emergency telephone number.
12. Document number, issue date, approval signatures, and revision history.