

Product name	Diocetyl maleate	Revision Date	NA/EN
MSDS number	80485	Issuing date	May.01.2015
Revision Number	0		May.01.2015

1. Product and company identification

Trade Name

Diocetyl maleate

Celanese Chemicals Europe GmbH

Frankfurter Str. 111
D-61476 Kronberg/Ts.
Germany

Transportation emergency phone numbers:

In USA, call 800 424 9300
Outside USA, call 703 527 3887, collect calls accepted.

Identified uses

Monomer, Reprographic agents (Toner)

2. Hazard Identification

GHS Classification

Hazards

Specific target organ systemic toxicity (repeated exposure)
Chronic aquatic toxicity

Category

Category 2
Category 1

Label elements



Signal Word

Warning

Hazard Statements

May cause damage to organs through prolonged or repeated exposure
Very toxic to aquatic life with long lasting effects

Precautionary statements

Do not breathe dust/fume/gas/mist/vapors/spray
Get medical advice/attention if you feel unwell
Dispose of contents/ container to an approved waste disposal plant.

3. Composition/information on ingredients

Components	CAS-No	Percent %
Bis(2-ethylhexyl)maleate	142-16-5	>= 98

Product name	Diocetyl maleate		NA/EN
MSDS number	80485	Revision Date	May.01.2015
Revision Number	0	Issuing date	May.01.2015

4. First aid measures

General Information

Remove contaminated, soaked clothing immediately and dispose of safely.

Skin

Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

Eyes

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Inhalation

Keep at rest. Aerate with fresh air. If symptoms persist, call a physician.

Ingestion

Call a physician immediately. Do not induce vomiting without medical advice.

5. Fire-fighting measures

NFPA: **Health:** 2 **Flammability:** 1 **Instability:** 0

Suitable extinguishing media

Foam, Dry chemical, Carbon dioxide (CO₂)

Extinguishing media which must not be used for safety reasons

Do not use a solid water stream as it may scatter and spread fire.

Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases

Under conditions giving incomplete combustion, hazardous gases produced may consist of

Carbon monoxide

Carbon dioxide (CO₂)

Combustion gases of organic materials must in principle be graded as inhalation poisons

Special protective equipment for fire-fighters

self-contained breathing apparatus (EN 133).

Environmental precautions

Water used to fight fire runoff can cause environmental damage. Dike and collect water used to fight fire.

Other Information

Cool containers / tanks with water spray

6. Accidental release measures

Personal precautions

Avoid contact with the skin and the eyes. Keep away from heat and sources of ignition. Provide adequate ventilation.

Product name	Diocetyl maleate		NA/EN
MSDS number	80485	Revision Date	May.01.2015
Revision Number	0	Issuing date	May.01.2015

Isolation

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. Isolate for 800 meters or 0.5 miles in all directions if tank, rail car, or tank truck is involved in fire. Evacuate downwind areas as conditions warrant to prevent exposure and to allow vapors or fumes to dissipate. Spills may expose downwind areas to toxic or flammable concentrations over considerable distances in some cases.

Environmental precautions

Prevent further leakage or spillage. Do not discharge into the drains/surface waters/groundwater.

Methods for cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Dispose of in accordance with local regulations.

7. Handling and storage

Advice on safe handling

Provide sufficient air exchange and/or exhaust in work rooms.

Protection - fire and explosion:

Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge. Ground and bond containers when transferring material. In case of fire, emergency cooling with water spray should be available.

Technical measures/Storage conditions

Keep tightly closed in a dry, cool and well-ventilated place. Handle an open container with care.

Material storage

Keep in a dry, cool and well-ventilated place.

Incompatible products

No hazards to be especially mentioned

8. Exposure controls / personal protection

OSHA Exposure Limits

No exposure limits established.

ACGIH Exposure Limits

No exposure limits established.

Mexico National Exposure Limits

No exposure limits established

Exposure controls

Product name Dioctyl maleate
MSDS number 80485
Revision Number 0

NA/EN
Revision Date May.01.2015
Issuing date May.01.2015

Engineering measures

General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Protective equipment

A safety shower and eyebath should be readily available.

General advice

Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Use only in an area equipped with a safety shower. Hold eye wash fountain available.

Respiratory protection

Based on workplace contaminant level and working limits of the respirator, use a respirator approved by NIOSH.

Eye/face protection:

Wear chemical goggles when there is a reasonable chance of eye contact..

9. Physical and chemical properties

Appearance

Form	liquid
Color	colourless
Odor	ester-like
Molecular Weight	340.56
Flash point	185°C(365°F)
Method	closed cup
Autoignition Temperature	260 °C
Method	EU A.15
Decomposition Temperature	not determined
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Melting point/range	-60°C (-76°F)
Boiling point/range	156°C (327.2°F) @ 9 hPa
Density	0.94 g/ml @ 20°C
pH	not determined
Viscosity	8.29 mPa*s @ 20°C
Method	calculated
Vapor pressure	0.00022 Pa @ 20°C 0.0096 Pa @ 50°C
Vapor density	11.7 (Air=1)
Evaporation Rate	not determined
Water solubility	< 36 µg/l @ 20°C
Solubility in other solvents	not determined
Partition coefficient (n-octanol/water)	~ 7.24 (measured)

Product name	Diocetyl maleate	Revision Date	NA/EN
MSDS number	80485	Issuing date	May.01.2015
Revision Number	0		May.01.2015

10. Stability and reactivity

Chemical stability

Stable under normal conditions of handling, use and transportation.

Conditions to avoid

Avoid any source of ignition. Avoid contact with heat, sparks, open flame, and static discharge.

Incompatible Materials

None known

Hazardous Combustion or Decomposition Products:

Thermal decomposition products may include oxides of carbon.

11. Toxicological information

Potential health effects

Routes of exposure Skin, eyes, inhalation, ingestion.

Immediate effects

Skin	May cause skin irritation. Symptoms of overexposure include: Redness or discoloration, swelling, itching, burning or blistering of skin.
Eyes	May cause eye irritation. Symptoms of exposure may include: Eye irritation or burning sensation.
Inhalation	May cause irritation of respiratory tract.
Ingestion	Essentially non-toxic.

Target organ effects Local irritation at the site of exposure

Medical conditions which may be aggravated by exposure: Skin

Bis(2-ethylhexyl)maleate

Acute oral toxicity	LD50: > 2000 mg/kg
Acute dermal toxicity	LD50: 14000 mg/kg
Skin corrosion/irritation	slight irritant effect - does not require labelling
Species	rabbit
Method	OECD 404
Skin Sensitization	nonsensitizer
Species	guinea pig female
Method	OECD 406
Serious eye damage/eye irritation	No eye irritation

Product name Dioctyl maleate
MSDS number 80485
Revision Number 0

NA/EN

Revision Date
Issuing date

May.01.2015
 May.01.2015

Bis(2-ethylhexyl)maleate

Species	rabbit eye
Method	OECD 405
Carcinogenic effects	No evidence of carcinogenicity
in vitro Mutagenicity	Ames Test: negative - with and without metabolic activation - Method: OECD 471
in vivo Mutagenicity	No evidence of in vitro mutagenicity
Reproductive toxicity	No adverse reproductive / developmental effects at the highest dose tested
Routes of exposure	oral gavage
Species	rat
	NOAEL: ~ 1000 mg/kg bw/day
Repeated exposure	Chronic progressive nephropathy and mineralization in the kidneys (Reference substance: Dibutyl maleate)
Routes of exposure	oral gavage
Species	rats
Method	OECD 408
	LOAEL: 30 mg/kg/d

12. Ecological Information

Bis(2-ethylhexyl)maleate

Acute fish toxicity	LC50: > 100 mg/l (96h)
Species:	Danio rerio (Zebra fish)
Method	OECD 203
Acute daphnia toxicity	EC50: 59.5 mg/l (48h)
Species:	Daphnia magna
Method	OECD 202
Toxicity to aquatic plants	EC50: > 0.619 mg/l (72h)
Species:	Pseudokirchneriella subcapitata
Method	OECD 201
Toxicity to bacteria	EC50: > 1000 mg/l (3h)
Species:	in activated sludge
Method	OECD 209
Biodegradation	degradable
Species:	activated sludge
Method	OECD 301 F
Mobility in soil	KOC: 153400 l/kg
Other potential hazards	The substance does not meet the criteria for PBT / vPvB according to REACH, Annex XIII

Product name Dioctyl maleate
MSDS number 80485
Revision Number 0

NA/EN

Revision Date May.01.2015
Issuing date May.01.2015

13. Disposal considerations

Disposal considerations

Dispose of spilled material in accordance with state and local regulations for waste that is non-hazardous by Federal definition. Note that this information applies to the material as manufactured; processing, use, or contamination may make this information inappropriate, inaccurate, or incomplete.

Note that this handling and disposal information may also apply to empty containers, liners and rinsate. State or local regulations or restrictions are complex and may differ from federal regulations. This information is intended as an aid to proper handling and disposal; the final responsibility for handling and disposal is with the owner of the waste.

14. Transport information

US Department of Transportation

UN/NA Number: UN 3082
Proper Shipping Name Environmentally hazardous substances, liquid, n.o.s.
Hazard Inducer (Bis(2-ethylhexyl) maleate)
Hazard class 9
Packing Group III
Emergency Resp. Guide 171
Marine pollutant Yes

Mexico Transport Information

UN-No. UN 3082
Proper Shipping Name Environmentally hazardous substances, liquid, n.o.s.
Hazard Inducer (Bis(2-ethylhexyl) maleate)
Hazard Class 9
Packing Group III

ICAO/IATA

UN-No. UN 3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.
Hazard Inducer (Bis(2-ethylhexyl) maleate)
Hazard Class 9
Packing group III

IMDG

UN/ID No. UN 3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.
Hazard Inducer (Bis(2-ethylhexyl) maleate)
Hazard Class 9
Packing group III
Marine pollutant yes
EmS Code F-A, S-F

Product name	Diocetyl maleate		NA/EN
MSDS number	80485	Revision Date	May.01.2015
Revision Number	0	Issuing date	May.01.2015

15. Regulatory Information

US State Regulations

Chemicals associated with the product which are subject to the state right-to-know regulations are listed along with the applicable state(s):

2-Ethylhexan-1-ol 104-76-7

Pennsylvania	Listed
New Jersey	Listed
Massachusetts	Listed

U.S. FEDERAL REGULATIONS

TSCA Inventory:

We certify that all components are either on the TSCA inventory or qualify for an exemption.

Environmental Regulations:

SARA 311:

Acute health:	Yes
Chronic health:	No
Fire:	No
Sudden release of pressure:	No
Reactive:	No

INTERNATIONAL REGULATIONS

International Inventories

Listed on the chemical inventories of the following countries or qualifies for an exemption:

- Australia (AICS)
- Canada (DSL)
- China (IECSC)
- Europe (EINECS)
- Japan (ENCS)
- Japan (ISHL)
- Korea (KECI)
- New Zealand (NZIoC)
- Philippines (PICCS)
- United States (TSCA)

16. Other information

NFPA:	Health: 2	Flammability: 1	Instability: 0
HMIS:	Health: 2	Flammability: 1	Physical Hazard: 0

Product name	Diocetyl maleate		NA/EN
MSDS number	80485	Revision Date	May.01.2015
Revision Number	0	Issuing date	May.01.2015

16. Other information

Prepared By

Product Stewardship Department
Celanese

Sources of key data used to compile the datasheet

Information contained in this safety data sheet is based on Celanese owned data and public sources deemed valid or acceptable.. The absence of data elements required by ANSI or 1907/2006/EC indicates that no data meeting these requirements is available..

Other Information:

Observe national and local legal requirements
Changes against the previous version are marked by ***

Abbreviation and Acronym:

ADR = Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS = Chemical Abstracts Service (division of the American Chemical Society)
CLP = Classification, Labelling and Packaging
DNEL = Derived No Effect Level
EINECS = European Inventory of Existing Commercial Chemical Substances
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC Code = International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IMO)
ICAO = International Civil Aviation Organization
IMDG = International Maritime Code for Dangerous Goods
LC50 = Lethal Concentration
LD50 = Lethal Dose
LOAEC = Low Observed Adverse Effect Concentration
LOAEL = Low Observed Adverse Effect Level
LOEL = Low Observed Effect Level
MEST = Mouse Ear Swelling Test
NOAEC = No Observed Adverse Effect Concentration
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
NOEL = No Observed Effect Level
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RCR = Risk Characterization Ratio
RID = Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
R-Phrases = Risk Phrases
S-Phrases = Safety Phrases
STOT RE = Specific Target Organ Toxicity Repeated Exposure
STOT SE = Specific Target Organ Toxicity Single Exposure
STP = Sewage Treatment Plant
vPvB = very Persistent and very Bioaccumulative