

SECTION-1: Identification of the substance / mixture and the company / undertaking

Catalogue Number	CS-TB-35647
Product Name	2-(Diethylamino)ethyl Methacrylate
CAS No.	105-16-8
Category	Fine Chemicals
Synonyms	Methacrylic acid, 2-(diethylamino)ethyl ester (6CI, 8CI); 2-(Diethylamino)ethyl 2-methylprop-2-enoate
Brand	Clearsynth Labs Ltd.
Identified uses	Laboratory Chemicals
Uses advised against	Not available
Company	Clearsynth Labs Ltd. Mumbai, India
Emergency Phone #	+91-22-245045900
REACH No.	Not available

SECTION 2: Hazards identification

Disclaimer: This is sample MSDS. Please email sales@clearsynth.com for more details.

2.1 Classification of the substance or mixture-Regulation (EC) No 1272/2008:

Skin irritation (Category 2)
 Serious eye damage/eye irritation (Category 2)
 Acute toxicity (Category 4)

2.2 Label Elements

Signal Word: Warning



Hazard Statement(s)

Code	Statement
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.

H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H302	Harmful if swallowed.
H227	Not available
H314	Not available
H318	Causes serious eye damage.
H360	Not available
H371	Not available
H303	Not available
H333	Not available

Precautionary Statement(s)

Code	Statement
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P264+P265	Not available
P271	Use only outdoors or in a well-ventilated area.
P272	Not available
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present.
P317	Not available
P321	Specific treatment (see ... on this label).
P332+P317	If skin irritation occurs: Get medical help.
P333+P317	Not available
P337+P317	If eye irritation persists: Get medical help.
P362+P364	Take off contaminated clothing and wash it before reuse.
P501	Dispose of contents/container in accordance with local/regional/national/international regulation.
P270	Not available

P301+P317	Not available
P330	Not available
P203	Not available
P210	Not available
P260	Not available
P301+P330+P331	Not available
P302+P361+P354	Not available
P305+P354+P338	Not available
P308+P316	Not available
P316	Not available
P318	Not available
P363	Not available
P370+P378	Not available
P403	Not available
P405	Store locked up.
P304+P317	Not available

SECTION 3: Composition / information on ingredients

3.1 Substance

Component : 2-(Diethylamino)ethyl Methacrylate

CAS Number : 105-16-8

Molecular Formula : C10H19NO2

Molecular Weight : 185.27

Parent Chemical : -

Synonyms : Methacrylic acid, 2-(diethylamino)ethyl ester (6CI, 8CI); 2-(Diethylamino)ethyl 2-methylprop-2-enoate

Concentration : Not available

SECTION 4: First aid measures

SECTION 4: First-aid measures

4.1 Description of first aid measures

General advice:

- Remove contaminated clothing and shoes. Seek medical attention if symptoms persist or are severe.
- Show this SDS to the physician in attendance.

Inhalation:

- Move person to fresh air. Keep at rest in a position comfortable for breathing.
- If breathing is difficult, seek medical attention.

Skin contact:

- Wash immediately with plenty of soap and water.
- Seek medical attention if irritation, redness, or pain develops or persists.

Eye contact:

- Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do; continue rinsing.
- Seek medical attention.

Ingestion:

- Rinse mouth. Do NOT induce vomiting.
- Never give anything by mouth to an unconscious person.
- Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

- Not available.

4.3 Indication of any immediate medical attention and special treatment needed

- Treat symptomatically.
- No data available.

SECTION 5: Firefighting measures

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media:

- Water spray, alcohol-resistant foam, dry chemical, carbon dioxide (CO₂).

Unsuitable extinguishing media:

- Not available.

5.2 Special hazards arising from the substance or mixture

- Combustible/flammable liquid; vapors may form explosive mixtures with air (data not available).
- Thermal decomposition may produce irritating and/or toxic fumes.
- Hazardous combustion products: Not available.

5.3 Advice for firefighters

- Wear self-contained breathing apparatus (SCBA) and full protective gear.
- Use water spray to cool unopened containers.
- Fight fire from a safe distance and protected location.

SECTION 6: Accidental release measures

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Evacuate unnecessary personnel.
- Ensure adequate ventilation.
- Avoid breathing vapors/mist.

- Avoid contact with skin and eyes.
- Wear appropriate personal protective equipment (see Section 8).
- Eliminate all ignition sources.

6.2 Environmental precautions

- Prevent further leakage or spillage if safe to do so.
- Avoid release to the environment. Prevent entry into drains, sewers, or waterways.

6.3 Methods and material for containment and cleaning up

- Contain spill with inert absorbent material (e.g., sand, earth, vermiculite).
- Collect into suitable, closed containers for disposal.
- Clean contaminated area with suitable cleaning agent; avoid generating aerosols.

6.4 Reference to other sections

- See Section 8 for personal protective equipment.
- See Section 13 for disposal considerations.

SECTION-7: Handling and storage

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Use only with adequate ventilation.
- Avoid breathing vapors/mist.
- Avoid contact with skin, eyes, and clothing.
- Keep away from heat, sparks, open flames, and hot surfaces.
- Use non-sparking tools and explosion-proof equipment where appropriate.
- Wash thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

- Store in a cool, dry, well-ventilated place.
- Keep container tightly closed.
- Protect from heat and direct sunlight.
- Keep away from ignition sources.
- Incompatible materials: Not available.

7.3 Specific end use(s)

- Fine chemical / laboratory and industrial use. No data available.

SECTION 8: Exposure controls / personal protection

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits:

- Not available.

Biological limit values:

- Not available.

8.2 Exposure controls

Engineering controls:

- Provide local exhaust ventilation or general dilution ventilation to maintain airborne concentrations below applicable limits.
- Use explosion-proof ventilation/electrical equipment where appropriate.

Personal protective equipment (PPE):

Eye/face protection:

- Safety glasses with side shields or chemical splash goggles.

Skin protection:

- Wear protective gloves (material selection dependent on use conditions; no data available).
- Wear protective clothing to prevent skin contact.

Respiratory protection:

- If ventilation is inadequate, use appropriate respiratory protection.
- Respirator selection should be based on hazard and exposure assessment; no data available.

Hygiene measures:

- Remove contaminated clothing and wash before reuse.
- Do not eat, drink, or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Test	Result
Appearance	No data available
IR spectrum	No data available
pH	No data available
Solubility	No data available

Property	Value
a) Physical State	No data available
b) Color	No data available
c) Odor	No data available
d) pH	No data available
e) Vapour Pressure	No data available
f) Viscosity	No data available
g) Initial Boiling Point and boiling range	No data available
h) Melting Point / Freezing Point	No data available

Property	Value
i) Auto Ignition Temperature	No data available
j) Flash Point	No data available
k) Explosion Limit, Lower	No data available
l) Explosion Limit, Upper	No data available
m) Decomposition Temperature	No data available
n) Loss on Drying	No data available
o) Relative Density	No data available
p) Solubility (in DMSO)	No data available
q) Oxidizing Properties	No data available

SECTION 10: Stability and reactivity

SECTION 10: Stability and reactivity

10.1 Reactivity

- No data available.

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- Hazardous polymerization may occur (methacrylate monomer); conditions not available.

10.4 Conditions to avoid

- Heat, flames, sparks, and other ignition sources.
- Excessive heat and contamination.

10.5 Incompatible materials

- Not available.

10.6 Hazardous decomposition products

- Not available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

- Acute toxicity: HUMAN EXPOSURE AND TOXICITY: No human studies available. ANIMAL STUDIES:

2-(N,N-diethylamino)ethyl methacrylate, in acute studies with rabbits, initially suppressed brain electrical activity and then induced clonic-tonic spasms. It was strongly irritating to skin of guinea pigs and conjunctiva of rabbits. LC50 (rat) = 11,000 mg/m³/4h

- Skin corrosion/irritation: No data available.
- Serious eye damage/eye irritation: No data available.
- Respiratory or skin sensitization: No data available.

- Germ cell mutagenicity: This chemical did not induce gene mutations in *S. typhimurium* and *E. coli* strains. Toxicity was observed at 5000 ug/plate (TA100, TA1535, TA98, TA1537) without an S9 mix and at 2500 ug/plate (five strains) with an S9 mix. Toxicity was not observed at 5000 ug/plate in WP2 uvrA without an S9 mix. In a chromosome aberration test using Chinese hamster lung cells, structural chromosomal aberrations were induced at 0.30 and 0.60 mg/mL in the presence of an exogenous metabolic activation system.
- Carcinogenicity: /LABORATORY ANIMALS: Acute Exposure/ A novel long-circulating and pH-responsive dendrimer nanocarrier was prepared for delivering 5-fluorouracil (5-FU) to tumors through the targeting of nanoparticles to the low pH environment of tumors. The nanocarrier, poly(2-(N,N-diethylamino)ethyl methacrylate) with methoxy-poly(ethylene glycol)-poly(amidoamine) (PPD), had a core-shell structure with 4.0 G poly(amidoamine) (PAMAM) as the core and parallel poly(2-(N,N-diethylamino)ethyl methacrylate) (PDEA) chains and methoxy-poly(ethylene glycol) (mPEG) chains as the shell. The PDEA chain was pH-responsive, and the PEG chains led to long circulation in blood vessels to achieve tumor targeting. The sizes, drug encapsulation and release of PPD nanocarriers showed high pH-dependency due to the PDEA chains, as they were hydrophilic at pH 6.5 and hydrophobic at pH 7.4. The encapsulation efficiency of 5-FU in PPD nanocarriers was as high as 92.5% through the pH transition. The release of 5-FU from PPD nanocarriers was much faster at pH 6.5 than at pH 7.4. The 5-FU-loaded nanocarrier had a long half-life after intravenous administration in mice and showed high tumor targeting. This nanocarrier composite also showed enhanced anticancer effects. PPD is a promising nanocarrier of anticancer drugs with high encapsulation, tumor targeting and pH-responsive release in tumors.
- Reproductive toxicity: No data available.
- STOT-single exposure: No data available.
- STOT-repeated exposure: /LABORATORY ANIMALS: Subchronic or Prechronic Exposure/ In a 50 day repeat dose toxicity test, male and female Crj:CD(SD) rats (12 each) were given 0(vehicle), 50, 150, and 500 mg/kg/day 2-(diethylamino)ethyl methacrylate (99.8% pure) in olive oil by gavage. In males of the 500 mg/kg group, low values for hemoglobin, mean corpuscular volume, mean corpuscular hemoglobin and mean corpuscular hemoglobin concentration and high values for unsaturated iron-binding capacity and total iron-binding capacity were seen, as well as low alpha2u-globulin and high alpha2u-globulin fraction ratios, which were thought to be reflections of the aforementioned changes. In addition, high values for BUN and absolute and relative weights of kidneys were observed. There were no effects of the test substance on clinical signs, body weights, food consumption, urinalysis parameters, gross pathology or histopathology. In the 150 mg/kg group, high values for BUN and relative weights of kidneys were observed. There were no effects of the test substance on clinical signs, body weights, food consumption, urinalysis data, hematology, gross pathology or histopathology. In the 50 mg/kg group, there were no effects of the test substance with regard to any observation, measurement or examination. As for females, there were no effects of the test substance on clinical signs, body weights, food consumption or histopathology in any treatment groups. The NOELs for repeat dose toxicity are considered to be 50 mg/kg/day for males, and 500 mg/kg/day for females.
- Aspiration hazard: No data available.

Likely routes of exposure

- No data available.

Symptoms related to the physical, chemical and toxicological characteristics

- /LABORATORY ANIMALS: Acute Exposure/ A novel long-circulating and pH-responsive dendrimer nanocarrier was prepared for delivering 5-fluorouracil (5-FU) to tumors through the targeting of nanoparticles to the low pH environment of tumors. The nanocarrier, poly(2-(N,N-diethylamino)ethyl methacrylate) with methoxy-poly(ethylene glycol)-poly(amidoamine) (PPD), had a core-shell structure with 4.0 G poly(amidoamine) (PAMAM) as the core and parallel poly(2-(N,N-diethylamino)ethyl methacrylate) (PDEA) chains and methoxy-poly(ethylene glycol) (mPEG) chains as the shell. The PDEA chain was pH-responsive, and the PEG chains led to long circulation in blood vessels

to achieve tumor targeting. The sizes, drug encapsulation and release of PPD nanocarriers showed high pH-dependency due to the PDEA chains, as they were hydrophilic at pH 6.5 and hydrophobic at pH 7.4. The encapsulation efficiency of 5-FU in PPD nanocarriers was as high as 92.5% through the pH transition. The release of 5-FU from PPD nanocarriers was much faster at pH 6.5 than at pH 7.4. The 5-FU-loaded nanocarrier had a long half-life after intravenous administration in mice and showed high tumor targeting. This nanocarrier composite also showed enhanced anticancer effects. PPD is a promising nanocarrier of anticancer drugs with high encapsulation, tumor targeting and pH-responsive release in tumors.

SECTION 12: Ecological information

SECTION 12: Ecological information

12.1 Toxicity

- Not available.

12.2 Persistence and degradability

- Not available.

12.3 Bioaccumulative potential

- Not available.

12.4 Mobility in soil

- Not available.

12.5 Results of PBT and vPvB assessment

- Not available.

12.6 Endocrine disrupting properties

- No data available.

12.7 Other adverse effects

- Not available.

SECTION 13: Disposal considerations

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product:

- Dispose of contents/container in accordance with local/regional/national/international regulations.
- Do not discharge to drains.

Contaminated packaging:

- Dispose of as unused product in accordance with applicable regulations.

Waste code:

- Not available.

SECTION 14: Transport information

SECTION 14: Transport information

14.1 UN number

- Not available.

14.2 UN proper shipping name

- Not available.

14.3 Transport hazard class(es)

- Not available.

14.4 Packing group

- Not available.

14.5 Environmental hazards

- Not available.

14.6 Special precautions for user

- Not available.

14.7 Transport in bulk according to IMO instruments

- Not available.

SECTION 15: Regulatory information

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- Regulatory status/inventories: Not available.

15.2 Chemical safety assessment

- No data available.

SECTION 16: Other information

SECTION 16: Other information

Product identification:

- Product name: 2-(Diethylamino)ethyl Methacrylate

- CAS No.: 105-16-8

- Catalog No.: CS-TB-35647

- Synonyms: Methacrylic acid, 2-(diethylamino)ethyl ester (6CI, 8CI); 2-(Diethylamino)ethyl 2-methylprop-2-enoate

- Supplier: Clearsynth Labs Ltd., Mumbai, India

- Emergency phone: +91-22-245045900

Revision information:

- Revision date: Not available

- Version: Not available

Disclaimer:

- The information provided is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. The supplier shall not be held liable for any damage resulting from handling or from contact with the product.

DISCLAIMER

This MSDS is system-generated. Please verify and confirm all data, statements, and values with the Support Team before use or distribution.