

SAFETY DATA SHEET

1. Identification

Product identifier: DIETHYLAMINE

Other means of identification

Product No.: 1832, 9216

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034

Telephone: Customer Service: 855-282-6867

Fax:
Contact Person: Environmental Health & Safety
e-mail: info@avantormaterials.com

Emergency telephone number:

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard classification

Physical hazards

Flammable liquids Category 2

Health hazards

Acute toxicity (Oral)	Category 4
Acute toxicity (Dermal)	Category 3
Acute toxicity (Inhalation - vapor)	Category 4
Skin corrosion/irritation	Category 1A
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity - single exposure	Category 3

Environmental hazards

Acute hazards to the aquatic environment Category 3

Label elements

Hazard symbol:



Signal word: Danger

Hazard statement: Highly flammable liquid and vapor.
Harmful if swallowed.
Toxic in contact with skin.
Harmful if inhaled.
Causes severe skin burns and eye damage.
May cause respiratory irritation.
Harmful to aquatic life.

Precautionary statement

Prevention: Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust/fume/gas/mist/vapors/spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment.

Response: Specific treatment (see this label). IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell. IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage: Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Substances

Chemical identity	Common name and synonyms	CAS number	Content in percent (%)*
DIETHYLAMINE		109-89-7	100%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Call a physician or poison control center immediately. Rinse mouth. Do NOT induce vomiting.

Inhalation:	Move to fresh air. Call a physician or poison control center immediately. If breathing stops, provide artificial respiration.
Skin contact:	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention immediately.

Most important symptoms/effects, acute and delayed

Symptoms:	Toxic in contact with skin. Harmful if swallowed. Harmful if inhaled. Causes severe skin and eye burns.
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Indication of immediate medical attention and special treatment needed

Treatment:	Treat symptomatically. Symptoms may be delayed.
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5. Fire-fighting measures

General fire hazards:	Flammable liquid and vapor.
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Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Dry chemical. Alcohol foam. Carbon dioxide
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Unsuitable extinguishing media:	Water may be ineffective in fighting the fire.
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Specific hazards arising from the chemical:	Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations. Heat may cause the containers to explode. Contact with strong oxidizers may cause fire.
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Special protective equipment and precautions for firefighters

Special fire fighting procedures:	Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Fight fire from a protected location. Cool containers exposed to flames with water until well after the fire is out.
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Special protective equipment for fire-fighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
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6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Keep upwind. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. See Section 8 of the MSDS for Personal Protective Equipment.
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Methods and material for containment and cleaning up:	Use only non-sparking tools. Take precautionary measures against static discharges. Stop leak if possible without any risk. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.
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Notification Procedures:	Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.
Environmental precautions:	Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling:	DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Wear protective gloves/protective clothing/eye protection/face protection. Do not get in eyes, on skin, on clothing. Do not breathe mist or vapor. Do not taste or swallow. Do not eat, drink or smoke when using the product. Use only with adequate ventilation. Wash hands thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.
Conditions for safe storage, including any incompatibilities:	Keep container tightly closed in a cool, well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
DIETHYLAMINE	TWA	5 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	15 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	25 ppm 75 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	10 ppm 30 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	25 ppm 75 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	10 ppm 30 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	25 ppm 75 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

Appropriate engineering controls	No data available.
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Individual protection measures, such as personal protective equipment

General information:	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.
Eye/face protection:	Wear safety glasses with side shields (or goggles) and a face shield.
Skin protection	
Hand protection:	Chemical resistant gloves

Other:	Wear suitable protective clothing.
Respiratory protection:	In case of inadequate ventilation use suitable respirator.
Hygiene measures:	Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

9. Physical and chemical properties

Appearance

Physical state:	Liquid
Form:	Liquid
Color:	Colorless
Odor:	Ammonia-like odor
Odor threshold:	No data available.
pH:	Caustic
Melting point/freezing point:	-50 °C
Initial boiling point and boiling range:	55 °C
Flash Point:	< -26 °C (Closed Cup)
Evaporation rate:	16.9 (butyl acetate=1)
Flammability (solid, gas):	Class IB Flammable Liquid
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	10.1 %(V)
Flammability limit - lower (%):	1.8 %(V)
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	31.60 kPa (25 °C) 53.3 kPa (38 °C)
Vapor density:	2.53 AIR=1
Relative density:	0.71 (20 °C)
Solubility(ies)	
Solubility in water:	Completely Soluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	0.58
Auto-ignition temperature:	312 °C
Decomposition temperature:	No data available.
Viscosity:	No data available.

Other information

Molecular weight:	73.14 g/mol (C ₄ H ₁₁ N)
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10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Heat, sparks, flames. Contact with incompatible materials.
Incompatible materials:	No data available.

Hazardous decomposition products:

Thermal decomposition may produce oxides of carbon and nitrogen.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	Harmful if swallowed. May cause burns of the gastrointestinal tract if swallowed.
Inhalation:	Harmful if inhaled. Irritating to respiratory system.
Skin contact:	Toxic in contact with skin. Causes skin burns.
Eye contact:	Causes serious eye damage.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral	
Product:	LD 50 (Rat): 540 mg/kg LD 50 (Mouse): 500 mg/kg

Dermal	
Product:	LD 50 (Rabbit): 580 mg/kg

Inhalation	
Product:	LC 50 (Rat, 4 h): 17.3 mg/l

Repeated dose toxicity	
Product:	No data available.

Skin corrosion/irritation	
Product:	Toxic in contact with skin. Causes skin burns.

Serious eye damage/eye irritation	
Product:	Causes serious eye damage.

Respiratory or skin sensitization	
Product:	Not a skin sensitizer.

Carcinogenicity	
Product:	This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ cell mutagenicity

In vitro	
Product:	No mutagenic components identified

In vivo	
Product:	No mutagenic components identified

Reproductive toxicity	
Product:	No components toxic to reproduction

Specific target organ toxicity - single exposure

Product: Respiratory tract irritation.

Specific target organ toxicity - repeated exposure

Product: No data available.

Aspiration hazard

Product: Not classified

Other effects: None known.

12. Ecological information

Ecotoxicity:
Acute hazards to the aquatic environment:
Fish

Product: No data available.

Specified substance(s):

DIETHYLAMINE
LC 50 (Medaka, high-eyes (*Oryzias latipes*), 48 h): 1,000 mg/l Mortality
LC 50 (Guppy (*Poecilia reticulata*), 96 h): 100 - 180 mg/l Mortality
LC 50 (Rainbow trout, donaldson trout (*Oncorhynchus mykiss*), 96 h): 25 mg/l Mortality
LC 50 (Fathead minnow (*Pimephales promelas*), 96 h): 855 mg/l Mortality

Aquatic invertebrates

Product: No data available.

Specified substance(s):

DIETHYLAMINE
EC 50 (Water flea (*Daphnia magna*), 24 h): 161 - 168 mg/l Intoxication
LC 50 (Water flea (*Daphnia magna*), 48 h): 32 - 100 mg/l Mortality

Chronic hazards to the aquatic environment:
Fish

Product: No data available.

Aquatic invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and degradability
Biodegradation

Product: There are no data on the degradability of this product.

BOD/COD ratio

Product: No data available.

Bioaccumulative potential
Bioconcentration factor (BCF)

Product: No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow)

Product: Log Kow: 0.58

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

DIETHYLAMINE No data available.

Other adverse effects: Harmful to aquatic organisms.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number:	UN 1154
UN proper shipping name:	Diethylamine
Transport hazard class(es)	
Class(es):	3, 8
Label(s):	3, 8
Packing group:	II
Marine Pollutant:	No

IMDG

UN number:	UN 1154
UN proper shipping name:	DIETHYLAMINE
Transport hazard class(es)	
Class(es):	3, 8
Label(s):	3, 8
EmS No.:	F-E, S-C
Packing group:	II
Marine Pollutant:	No

IATA

UN number:	UN 1154
Proper Shipping Name:	Diethylamine
Transport hazard class(es):	
Class(es):	3, 8
Label(s):	3, 8
Marine Pollutant:	No
Packing group:	II

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

DIETHYLAMINE	Reportable quantity: 100 lbs.
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Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

☒ Acute (Immediate)
 ☐ Chronic (Delayed)
 ☒ Fire
 ☐ Reactive
 ☐ Pressure Generating

SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

SARA 304 Emergency release notification

Chemical identity	RQ
DIETHYLAMINE	100 lbs.

SARA 311/312 Hazardous chemical

Chemical identity	Threshold Planning Quantity
DIETHYLAMINE	500 lbs

SARA 313 (TRI reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

DIETHYLAMINE Reportable quantity: 100 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US state regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

DIETHYLAMINE Listed

US. Massachusetts RTK - Substance List

DIETHYLAMINE Listed

US. Pennsylvania RTK - Hazardous Substances

DIETHYLAMINE Listed

US. Rhode Island RTK

DIETHYLAMINE Listed

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Issue date: 09-02-2014

Revision date: No data available.

Version #: 1.0

Further information: No data available.

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