SAFETY DATA SHEET

1. Identification

Product identifier: NITROBENZENE

Other means of identification
Product No.: 9325

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 4

Health hazards

Acute toxicity (Oral)	Category 3
Acute toxicity (Dermal)	Category 3
Acute toxicity (Inhalation - vapor)	Category 3
Carcinogenicity	Category 2
Toxic to reproduction	Category 1A
Specific target organ toxicity - repeated exposure	Category 1

Environmental hazards

Chronic hazards to the aquatic environment	Category 3

Label elements

Hazard symbol:

Signal word: Danger

Hazard statement: Combustible liquid.
Toxic if swallowed.
Toxic in contact with skin.
Toxic if inhaled.
Suspected of causing cancer.
Causes damage to organs through prolonged or repeated exposure.
Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention: Keep away from heat/sparks/open flames/hot surfaces. No smoking. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust/fume/gas/mist/vapors/spray. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid release to the environment.

Response: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/physician if you feel unwell. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician.

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 (%)*
NITROBENZENE		98-95-3	99 - 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: Rinse mouth. Call a physician or poison control center immediately. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Inhalation: Move to fresh air. Get medical attention if symptoms persist. 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. Get medical attention if irritation persists after washing. 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 if irritation persists after washing.

Most important symptoms/effects, acute and delayed

Symptoms: Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General fire hazards: Combustible liquid. In case of fire and/or explosion do not breathe fumes.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: Contact with metals may evolve flammable hydrogen gas. Fire may produce irritating, corrosive and/or toxic gases.

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. Cool containers exposed to flames with water until well after the fire is out.

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.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Keep unauthorized personnel away. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Methods and material for containment and cleaning up: 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.

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: Use personal protective equipment as required. 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. Avoid contact with eyes. Avoid contact with skin. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Do not breathe dust/fume/gas/mist/vapors/spray. Wash contaminated clothing before reuse.

Conditions for safe storage, including any incompatibilities: Do not store in metal containers. Keep in a cool, well-ventilated place. Store in a dry place.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None of the components have assigned exposure limits.

Appropriate engineering controls No data available.

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.

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. Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Do not eat, drink or smoke when using the product. Wash contaminated clothing before reuse.

9. Physical and chemical properties

Appearance

Physical state:	Liquid
Form:	Oily liquid
Color:	Light yellow to brown
Odor:	Almond-like odor
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	5.7 °C
Initial boiling point and boiling range:	211 °C
Flash Point:	88 °C (Closed Cup)
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	1.8 %(V)
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	0.03 kPa (25 °C) 0.13 kPa (44.4 °C)

Vapor density:	4.3 AIR=1
Relative density:	1.2 (20 °C)
Solubility(ies)	
Solubility in water:	Practically Insoluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	1.85
Auto-ignition temperature:	428 °C
Decomposition temperature:	No data available.
Viscosity:	No data available.

Other information

Molecular weight:	123.11 g/mol (C6H5NO2)

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:	Freezing. Heat, sparks, flames. Contact with incompatible materials.
Incompatible materials:	Strong oxidizing agents. Acids. Aluminum. Chlorinated compounds. Reducing agents. Nitric acid. Sodium. Potassium Nitrogen Oxides Nitrates. Sodium hydroxide. Sulfuric acid. Tin. Zinc.
Hazardous decomposition products:	Nitrogen Oxides Oxides of Carbon.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	Toxic if swallowed.
Inhalation:	Toxic if inhaled.
Skin contact:	Toxic in contact with skin.
Eye contact:	May irritate eyes.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product:	LD 50 (Rat): 600 mg/kg

Dermal

Product:	No data available.

Inhalation

Product:	No data available.

Repeated dose toxicity

Product:	No data available.

Skin corrosion/irritation

Product:	Toxic in contact with skin.

Serious eye damage/eye irritation
Product: May irritate eyes.

Respiratory or skin sensitization
Product: Not a skin sensitizer.

Carcinogenicity
Product: Suspected of causing cancer.

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: May damage fertility or the unborn child.

Specific target organ toxicity - single exposure
Product: No data available.

Specific target organ toxicity - repeated exposure
Product: Causes damage to organs through prolonged or repeated exposure.

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):
NITROBENZENE — LC 50 (Bluegill (Lepomis macrochirus), 96 h): 36 - 49 mg/l Mortality
LC 50 (Fathead minnow (Pimephales promelas), 96 h): 40.94 - 47.51 mg/l Mortality

Aquatic invertebrates
Product: No data available.

Specified substance(s):
NITROBENZENE — EC 50 (Water flea (Daphnia magna), 48 h): 35 mg/l Intoxication
LC 50 (Water flea (Daphnia magna), 48 h): 22 - 32 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: 1.85

Mobility in soil: The product is water soluble and may spread in water systems.

Other adverse effects: Harmful to aquatic life with long lasting effects.

13. Disposal considerations

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

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

14. Transport information

DOT

UN number:	UN 1662
UN proper shipping name:	Nitrobenzene
Transport hazard class(es)	
Class(es):	6.1
Label(s):	6.1
Packing group:	II
Marine Pollutant:	Yes

IMDG

UN number:	UN 1662
UN proper shipping name:	NITROBENZENE
Transport hazard class(es)	
Class(es):	6.1
Label(s):	6.1
EmS No.:	F-A, S-A
Packing group:	II
Marine Pollutant:	No

IATA

UN number:	UN 1662
Proper Shipping Name:	Nitrobenzene
Transport hazard class(es):	
Class(es):	6.1
Label(s):	6.1
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):

None present or none present in regulated quantities.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

X	Acute (Immediate)	X	Chronic (Delayed)	X	Fire		Reactive		Pressure Generating

SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

SARA 304 Emergency release notification

None present or none present in regulated quantities.

SARA 311/312 Hazardous chemical

Chemical identity	Threshold Planning Quantity
NITROBENZENE	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)

None present or none present in regulated quantities.

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

NITROBENZENE	Male reproductive toxin. WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.
NITROBENZENE	Carcinogenic.
NITROBENZENE	Carcinogenic.
NITROBENZENE	Male reproductive toxin.

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

No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List

No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances

No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK

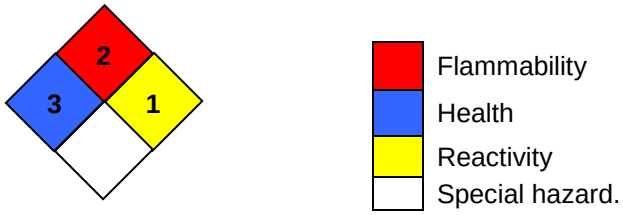
No ingredient regulated by RI Right-to-Know Law present.

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:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	On or 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:	Not in compliance with the inventory.
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	Not in compliance with the inventory.
Japan ISHL Listing:	Not 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:	10-01-2014
Revision date:	No data available.
Version #:	1.0
Further information:	No data available.

Disclaimer:

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