



Material Safety Data Sheet

Creation Date 09-Feb-2010

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Revision Number 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Benzine (Petroleum Naphtha)
Cat No.	B264-20
Synonyms	Naphtha; Naphtha solvent; Petroleum distillates
Recommended Use	Laboratory chemicals
Company Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410 Tel: (201) 796-7100	Emergency Telephone Number CHEMTREC®, Inside the USA: 800-424-9300 CHEMTREC®, Outside the USA: 703-527-3887

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview

Flammable liquid and vapor. Cancer hazard. May cause heritable genetic damage. May cause eye, skin, and respiratory tract irritation. May cause central nervous system effects. Aspiration hazard if swallowed - can enter lungs and cause damage. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Appearance Colorless	Physical State Liquid	odor Petroleum distillates
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Target Organs Central nervous system (CNS)

Potential Health Effects

Acute Effects

Principle Routes of Exposure

Eyes	May cause irritation.
Skin	May cause irritation. May be harmful in contact with skin.
Inhalation	May cause irritation of respiratory tract. Inhalation may cause central nervous system effects. May be harmful if inhaled.
Ingestion	Aspiration hazard. May be harmful if swallowed. May cause central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects May cause cancer. May cause heritable genetic damage.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions Central nervous system disorders. Preexisting eye disorders. Skin disorders.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	CAS-No	Weight %
Solvent naphtha (petroleum), light aliphatic	64742-89-8	100
Octane	111-65-9	1.5
Heptane (n-)	142-82-5	1.16
Xylenes (o-, m-, p- isomers)	1330-20-7	0.13
m-Xylene	108-38-3	0.05
Ethyl benzene	100-41-4	0.03
Benzene	71-43-2	0.015
Toluene	108-88-3	0.0118

4. FIRST AID MEASURES

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Get medical attention immediately if symptoms occur.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Centre immediately.
Notes to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point	14 - 18°C / 57.2 - 64.4°F
Method	No information available.
Autoignition Temperature	232°C / 449.6°F
Explosion Limits	
Upper	7.0 vol %
Lower	0.9 vol %
Suitable Extinguishing Media	CO ₂ , dry chemical, dry sand, alcohol-resistant foam.
Unsuitable Extinguishing Media	This material is lighter than water and insoluble in water. The fire could easily be spread by the use of water in an area where the water cannot be contained..
Hazardous Combustion Products	No information available.
Sensitivity to mechanical impact	No information available.
Sensitivity to static discharge	No information available.

Specific Hazards Arising from the Chemical

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA **Health 2** **Flammability 3** **Instability 0** **Physical hazards N/A**

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin, eyes and clothing.

Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Up Remove all sources of ignition. Soak up with inert absorbent material. Take precautionary measures against static discharges. Keep in suitable and closed containers for disposal.

7. HANDLING AND STORAGE

Handling Use only under a chemical fume hood. Use explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition. Wear personal protective equipment. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Take precautionary measures against static discharges.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Flammables area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Octane	TWA: 300 ppm	(Vacated) TWA: 1450 mg/m ³ (Vacated) TWA: 300 ppm (Vacated) STEL: 1800 mg/m ³ (Vacated) STEL: 375 ppm TWA: 500 ppm TWA: 2350 mg/m ³	IDLH: 1000 ppm TWA: 75 ppm TWA: 350 mg/m ³ Ceiling: 1800 mg/m ³ Ceiling: 385 ppm

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Heptane (n-)	TWA: 400 ppm STEL: 500 ppm	(Vacated) TWA: 1600 mg/m ³ (Vacated) TWA: 400 ppm (Vacated) STEL: 2000 mg/m ³ (Vacated) STEL: 500 ppm TWA: 500 ppm TWA: 2000 mg/m ³	IDLH: 750 ppm TWA: 350 mg/m ³ TWA: 85 ppm Ceiling: 1800 mg/m ³ Ceiling: 440 ppm
Xylenes (o-, m-, p- isomers)	TWA: 100 ppm STEL: 150 ppm	(Vacated) TWA: 100 ppm (Vacated) TWA: 435 mg/m ³ (Vacated) STEL: 150 ppm (Vacated) STEL: 655 mg/m ³ TWA: 100 ppm TWA: 435 mg/m ³	
m-Xylene	TWA: 100 ppm STEL: 150 ppm		IDLH: 900 ppm TWA: 100 ppm TWA: 435 mg/m ³ STEL: 150 ppm STEL: 655 mg/m ³
Ethyl benzene	TWA: 100 ppm STEL: 125 ppm	(Vacated) TWA: 100 ppm (Vacated) TWA: 435 mg/m ³ (Vacated) STEL: 545 mg/m ³ (Vacated) STEL: 125 ppm TWA: 435 mg/m ³ TWA: 100 ppm	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m ³ STEL: 545 mg/m ³ STEL: 125 ppm
Benzene	TWA: 0.5 ppm STEL: 2.5 ppm Skin	(Vacated) TWA: 10 ppm Ceiling: 25 ppm (Vacated) STEL: 50 ppm (Vacated) Ceiling: 25 ppm TWA: 10 ppm TWA: 1 ppm STEL: 5 ppm	IDLH: 500 ppm TWA: 0.1 ppm STEL: 1 ppm
Toluene	TWA: 20 ppm	(Vacated) TWA: 375 mg/m ³ (Vacated) TWA: 100 ppm Ceiling: 300 ppm (Vacated) STEL: 150 ppm (Vacated) STEL: 560 mg/m ³ TWA: 200 ppm	IDLH: 500 ppm TWA: 375 mg/m ³ TWA: 100 ppm STEL: 150 ppm STEL: 560 mg/m ³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Octane	TWA: 1400 mg/m ³ TWA: 300 ppm STEL: 375 ppm STEL: 1750 mg/m ³	TWA: 1450 mg/m ³ TWA: 300 ppm STEL: 1800 mg/m ³ STEL: 375 ppm	TWA: 1400 mg/m ³ TWA: 300 ppm STEL: 1750 mg/m ³ STEL: 375 ppm

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Heptane (n-)	TWA: 1640 mg/m ³ TWA: 400 ppm STEL: 500 ppm STEL: 2050 mg/m ³	TWA: 1600 mg/m ³ TWA: 400 ppm STEL: 2000 mg/m ³ STEL: 500 ppm	TWA: 1635 mg/m ³ TWA: 400 ppm STEL: 500 ppm STEL: 2045 mg/m ³
Xylenes (o-, m-, p- isomers)	TWA: 100 ppm TWA: 434 mg/m ³ STEL: 150 ppm STEL: 651 mg/m ³	TWA: 100 ppm TWA: 435 mg/m ³ STEL: 150 ppm STEL: 655 mg/m ³	TWA: 100 ppm TWA: 435 mg/m ³ STEL: 150 ppm STEL: 650 mg/m ³
m-Xylene	TWA: 100 ppm TWA: 434 mg/m ³ STEL: 150 ppm STEL: 651 mg/m ³	TWA: 100 ppm TWA: 435 mg/m ³ STEL: 150 ppm STEL: 655 mg/m ³	
Ethyl benzene	TWA: 100 ppm TWA: 434 mg/m ³ STEL: 543 mg/m ³ STEL: 125 ppm	TWA: 100 ppm TWA: 435 mg/m ³ STEL: 125 ppm STEL: 545 mg/m ³	TWA: 100 ppm TWA: 435 mg/m ³ STEL: 540 mg/m ³ STEL: 125 ppm
Benzene	TWA: 1 ppm TWA: 3 mg/m ³ STEL: 15.5 mg/m ³ STEL: 5 ppm	TWA: 1 ppm TWA: 3.2 mg/m ³ STEL: 16 mg/m ³ STEL: 5 ppm	TWA: 0.5 ppm STEL: 2.5 ppm
Toluene	TWA: 188 mg/m ³ TWA: 50 ppm Skin	TWA: 188 mg/m ³ TWA: 50 ppm	TWA: 20 ppm

NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment

Eye/face Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Colorless
odor	Petroleum distillates
Odor Threshold	No information available.
pH	No information available.
Vapor Pressure	15 mmHg @ 20 °C
Vapor Density	4.1 (Air = 1.0)
Viscosity	No information available.
Boiling Point/Range	118.5 - 140°C / 245.3 - 284.9°F
Melting Point/Range	No information available.
Decomposition temperature °C	No information available.
Flash Point	14 - 18°C / 57.2 - 64.4°F
Evaporation Rate	1.3 (Butyl Acetate = 1.0)
Specific Gravity	0.740
Solubility	Insoluble in water
log Pow	No data available
Molecular Formula	C5 to C10 hydrocarbons

10. STABILITY AND REACTIVITY

Stability

Stable under normal conditions.

Conditions to Avoid	Incompatible products. Heat, flames and sparks.
Incompatible Materials	Strong oxidizing agents
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO ₂), Hydrocarbons, Aldehydes
Hazardous Polymerization	Hazardous polymerization does not occur
Hazardous Reactions	None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Solvent naphtha (petroleum), light aliphatic	5000 mg/kg (Mouse)	3000 mg/kg (Rabbit)	Not listed
Octane	Not listed	Not listed	118 g/m ³ (Rat) 4 h 25.1 ppm (Rat) 4 h
Heptane (n-)	5000 mg/kg (Mouse)	3000 mg/kg (Rabbit)	103 g/m ³ (Rat) 4 h
Xylenes (o-, m-, p- isomers)	4300 mg/kg (Rat)	1700 mg/kg (Rabbit)	47635 mg/L (Rat) 4 h 5000 ppm (Rat) 4 h
m-Xylene	5000 mg/kg (Rat)	14100 µL/kg (Rabbit)	Not listed
Ethyl benzene	3500 mg/kg (Rat)	15354 mg/kg (Rabbit)	17.2 mg/L (Rat) 4 h
Toluene	636 mg/kg (Rat)	12124 mg/kg (Rat) 8390 mg/kg (Rabbit)	26700 ppm (Rat) 1 h 12.5 mg/L (Rat) 4 h

Irritation No information available.

Toxicologically Synergistic Products No information available.

Chronic Toxicity

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	ACGIH	IARC	NTP	OSHA	Mexico
Ethyl benzene	A3	Group 2B	Not listed	X	Not listed
Benzene	A1	Group 1	Known	X	Not listed

ACGIH: (American Conference of Governmental Industrial Hygienists)

- A1 - Known Human Carcinogen
- A2 - Suspected Human Carcinogen
- A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

IARC: (International Agency for Research on Cancer)

IARC: (International Agency for Research on Cancer)

- Group 1 - Carcinogenic to Humans
- Group 2A - Probably Carcinogenic to Humans
- Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)
 NTP: (National Toxicity Program)
 Known - Known Carcinogen
 Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

Sensitization	No information available.
Mutagenic Effects	No information available.
Reproductive Effects	No information available.
Developmental Effects	No information available.
Teratogenicity	No information available.
Other Adverse Effects	The toxicological properties have not been fully investigated.. See actual entry in RTECS for complete information.
Endocrine Disruptor Information	No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Solvent naphtha (petroleum), light aliphatic	EC50 72 h 4700 mg/L	Not listed	Not listed	Not listed
Octane	Not listed	Not listed	EC50 = 890 mg/L 30 min	EC50 48 h 0.38 mg/L
Heptane (n-)	Not listed	Not listed	Not listed	EC50: >10 mg/L/24h
Xylenes (o-, m-, p- isomers)	Not listed	Not listed	EC50 = 0.0084 mg/L 24 h	LC50 48 h 0.6 mg/L EC50 48 h 3.82 mg/L
m-Xylene	EC50 72 h 4.9 mg/L	Not listed	EC50 = 0.0084 mg/L 24 h	EC50 48 h 6.2 mg/L
Ethyl benzene	EC50 72 h 4.6 mg/L EC50 96 h >438 mg/L EC50 72 h 4.6 mg/L	Not listed	EC50 = 9.68 mg/L 30 min EC50 = 96 mg/L 24 h	EC50 48 h 1.8 - 2.4 mg/L
Toluene	EC50 96 h >433 mg/L	Not listed	EC50 = 19.7 mg/L 30 min	EC50 48 h 11.3 mg/L EC50 48 h 310 mg/L EC50 48 h 11.3 mg/L

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available

Mobility

Component	log Pow
Octane	5.18
Heptane (n-)	4.66
Xylenes (o-, m-, p- isomers)	2.77 - 3.15
m-Xylene	3.2
Ethyl benzene	3.118
Toluene	2.65

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Xylenes (o-, m-, p- isomers) - 1330-20-7	U239	-
Benzene - 71-43-2	U019	-
Toluene - 108-88-3	U220	-

14. TRANSPORT INFORMATION

DOT

UN-No UN1268
 Proper Shipping Name PETROLEUM DISTILLATES, N.O.S.
 Hazard Class 3
 Packing Group II

TDG

UN-No UN1268
 Proper Shipping Name PETROLEUM DISTILLATES, N.O.S.
 Hazard Class 3
 Packing Group II

IATA

UN-No UN1268
 Proper Shipping Name PETROLEUM DISTILLATES, N.O.S.
 Hazard Class 3
 Packing Group II

IMDG/IMO

UN-No UN1268
 Proper Shipping Name PETROLEUM DISTILLATES, N.O.S.
 Hazard Class 3
 Packing Group II

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
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15. REGULATORY INFORMATION											
Solvent naphtha (petroleum), light aliphatic	X	X	-	265-192-2	-		X	-	X	X	KE-31661 X
Octane	X	X	-	203-892-1	-		X	X	X	X	KE-26612 X
Heptane (n-)	T	X	-	205-563-8	-		X	X	X	X	KE-18271 X
Xylenes (o-, m-, p- isomers)	X	X	-	215-535-7	-		X	X	X	X	KE-35427 X
m-Xylene	X	X	-	203-576-3	-		X	X	X	X	KE-35428 X
Ethyl benzene	T	X	-	202-849-4	-		X	X	X	X	KE-13532 X
Benzene	X	X	-	200-753-7	-		X	X	X	X	KE-02150 X
Toluene	X	X	-	203-625-9	-		X	X	X	X	KE-33936 X

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b)

Component	TSCA 12(b)
Heptane (n-)	Section 4

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Xylenes (o-, m-, p- isomers)	1330-20-7	0.13	1.0
m-Xylene	108-38-3	0.05	1.0
Ethyl benzene	100-41-4	0.03	0.1

Benzene	71-43-2	0.015	0.1
Toluene	108-88-3	0.0118	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Xylenes (o-, m-, p- isomers)	X	100 lb	-	-
m-Xylene	X	-	-	-
Ethyl benzene	X	1000 lb	X	X
Benzene	X	10 lb	X	X
Toluene	X	1000 lb	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Xylenes (o-, m-, p- isomers)	X		-
m-Xylene	X		-
Ethyl benzene	X		-
Benzene	X		-
Toluene	X		-

OSHA

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Benzene	0.5 ppm Action Level 1 ppm TWA 5 ppm STEL	-

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Xylenes (o-, m-, p- isomers)	100 lb	-
m-Xylene	1000 lb	-
Ethyl benzene	1000 lb	-
Benzene	10 lb	-
Toluene	1000 lb	-

California Proposition 65

This product contains the following Proposition 65 chemicals:

Component	CAS-No	California Prop. 65	Prop 65 NSRL
Ethyl benzene	100-41-4	Carcinogen	-
Benzene	71-43-2	Carcinogen Developmental Male Reproductive	13 µg/day 6.4 µg/day
Toluene	108-88-3	Developmental	-

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Octane	X	X	X	-	X
Heptane (n-)	X	X	X	-	X
Xylenes (o-, m-, p- isomers)	X	X	X	X	X
m-Xylene	X	X	X	X	-
Ethyl benzene	X	X	X	X	X
Benzene	X	X	X	X	X
Toluene	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): Y
 DOT Marine Pollutant N
 DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade Serious risk, Grade 3

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

B2 Flammable liquid
 D2A Very toxic materials

**16. OTHER INFORMATION**

Prepared By Regulatory Affairs
 Thermo Fisher Scientific
 Tel: (412) 490-8929

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Revision Summary "****", and red text indicates revision

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS

REVIEWED

DATE: MAY 1/2013

Chatterford