

## SAFETY DATA SHEET

Creation Date 10-June-2014

Revision Date 24-December-2021

Revision Number 6

### 1. Identification

**Product Name** Nitrobenzene

**Cat No. :** AC128420000; AC128420010; AC128420025; AC128420100

**CAS-No** 98-95-3

**Synonyms** Essence of mirbane; Mirbane oil; Nitrobenzol

**Recommended Use** Laboratory chemicals.

**Uses advised against** Food, drug, pesticide or biocidal product use.

#### Details of the supplier of the safety data sheet

##### Company

##### **Importer/Distributor**

Fisher Scientific  
112 Colonnade Road,  
Ottawa, ON K2E 7L6,  
Canada  
Tel: 1-800-234-7437

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

##### **Manufacturer**

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

##### **Emergency Telephone Number**

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

### 2. Hazard(s) identification

#### Classification

##### **WHMIS 2015 Classification**

Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

<b>Flammable liquids</b>	Category 4
<b>Acute oral toxicity</b>	Category 3
<b>Acute dermal toxicity</b>	Category 3
<b>Acute Inhalation Toxicity</b>	Category 3
<b>Carcinogenicity</b>	Category 1B
<b>Reproductive Toxicity</b>	Category 1B
<b>Specific target organ toxicity - (repeated exposure)</b>	Category 1
Target Organs - Blood.	

#### Label Elements

##### **Signal Word**

Danger

**Hazard Statements**

Combustible liquid  
Toxic if swallowed, in contact with skin or if inhaled  
May cause cancer  
May damage fertility  
Causes damage to organs through prolonged or repeated exposure

**Precautionary Statements****Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Wear protective gloves/protective clothing/eye protection/face protection  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
Do not breathe dust/fumes/gas/mist/vapours/spray  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Use only outdoors or in a well-ventilated area

**Response**

IF exposed or concerned: Get medical advice/attention  
IF SWALLOWED: Immediately call a POISON CENTER/doctor  
IF ON SKIN: Wash with plenty of soap and water  
IF INHALED: Remove person to fresh air and keep comfortable for breathing  
Call a POISON CENTER/ doctor  
Rinse mouth  
Take off immediately all contaminated clothing  
Wash contaminated clothing before reuse  
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

**Storage**

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

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other Hazards**

Harmful to aquatic life with long lasting effects

### 3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Nitrobenzene	98-95-3	99

### 4. First-aid measures

**General Advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

<b>Skin Contact</b>	Immediate medical attention is required. Wash off immediately with plenty of water for at least 15 minutes.
<b>Inhalation</b>	Remove to fresh air. If breathing is difficult, give oxygen. Immediate medical attention is required. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
<b>Ingestion</b>	Do NOT induce vomiting. Call a physician or poison control center immediately.
<b>Most important symptoms/effects</b>	Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
<b>Notes to Physician</b>	Treat symptomatically

## 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Water spray, carbon dioxide (CO <sub>2</sub> ), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.
<b>Unsuitable Extinguishing Media</b>	No information available
<b>Flash Point</b>	88 °C / 190.4 °F
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	480 °C / 896 °F
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	1.8%
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

### Specific Hazards Arising from the Chemical

Flammable. Combustible material. Containers may explode when heated.

### Hazardous Combustion Products

Nitrogen oxides (NO<sub>x</sub>). Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

### 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	Flammability	Instability	Physical hazards
3	2	0	N/A

## 6. Accidental release measures

<b>Personal Precautions</b>	Evacuate personnel to safe areas. Ensure adequate ventilation. Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges.
<b>Environmental Precautions</b>	Should not be released into the environment. Do not flush into surface water or sanitary sewer system.
<b>Methods for Containment and Clean Up</b>	Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition.

## 7. Handling and storage

<b>Handling</b>	Use only under a chemical fume hood. Wear personal protective equipment/face protection.
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Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition.

**Storage.**

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat, sparks and flame. Incompatible Materials. Reducing Agent. Acids. Bases. Alkali metals. Oxidizing agent.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

Component	Alberta	British Columbia	Ontario TWAEV	Quebec	ACGIH TLV	OSHA PEL	NIOSH IDLH
Nitrobenzene	TWA: 1 ppm TWA: 5 mg/m <sup>3</sup> Skin	TWA: 1 ppm Skin	TWA: 1 ppm Skin	TWA: 1 ppm Skin	TWA: 1 ppm Skin	(Vacated) TWA: 1 ppm (Vacated) TWA: 5 mg/m <sup>3</sup> Skin TWA: 1 ppm TWA: 5 mg/m <sup>3</sup>	IDLH: 200 ppm TWA: 1 ppm TWA: 5 mg/m <sup>3</sup>

**Legend**

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

**Engineering Measures**

Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

**Personal protective equipment****Eye Protection**

If splashes are likely to occur: Goggles Face protection shield

**Hand Protection**

Protective gloves

Glove material	Breakthrough time	Glove thickness	Glove comments
Viton (R)	See manufacturers recommendations	-	Splash protection only

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

**Respiratory Protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. 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.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

**Recommended Filter type:** Organic gases and vapours filter Type A Brown conforming to EN14387

When RPE is used a face piece Fit Test should be conducted

**Environmental exposure controls**

Prevent product from entering drains.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do

not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

## 9. Physical and chemical properties

Physical State	Liquid
Appearance	Yellow
Odor	bitter almonds
Odor Threshold	No information available
pH	Not applicable
Melting Point/Range	5 - 6 °C / 41 - 42.8 °F
Boiling Point/Range	210 - 211 °C / 410 - 411.8 °F @ 760 mmHg
Flash Point	88 °C / 190.4 °F
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	1.8%
Vapor Pressure	0.2 mbar @ 20 °C
Vapor Density	4.25
Specific Gravity	1.205
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	480 °C / 896 °F
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	C6 H5 N O2
Molecular Weight	123.11

## 10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions. Unstable if heated.
Conditions to Avoid	Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.
Incompatible Materials	Reducing Agent, Acids, Bases, Alkali metals, Oxidizing agent
Hazardous Decomposition Products	Nitrogen oxides (NO <sub>x</sub> ), Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> )
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

## 11. Toxicological information

### Acute Toxicity

#### Product Information

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Nitrobenzene	LD50 = 349 mg/kg ( Rat )	LD50 = 760 mg/kg ( Rabbit )	LC50 = 2.847 mg/L ( Rat ) 4 h

**Toxicologically Synergistic Products** No information available

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation** No information available

**Sensitization** No information available

**Carcinogenicity** Possible cancer hazard. May cause cancer based on animal data. The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Nitrobenzene	98-95-3	Group 2B	Reasonably Anticipated	A3	X	A3

*IARC (International Agency for Research on Cancer)*

*NTP: (National Toxicity Program)*

*ACGIH: (American Conference of Governmental Industrial Hygienists)*

*Mexico - Occupational Exposure Limits - Carcinogens*

*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)*

*Known - Known Carcinogen*

*Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen*

*A1 - Known Human Carcinogen*

*A2 - Suspected Human Carcinogen*

*A3 - Animal Carcinogen*

*ACGIH: (American Conference of Governmental Industrial Hygienists)*

*Mexico - Occupational Exposure Limits - Carcinogens*

*A1 - Confirmed Human Carcinogen*

*A2 - Suspected Human Carcinogen*

*A3 - Confirmed Animal Carcinogen*

*A4 - Not Classifiable as a Human Carcinogen*

*A5 - Not Suspected as a Human Carcinogen*

**Mutagenic Effects** No information available

**Reproductive Effects** Experiments have shown reproductive toxicity effects on laboratory animals.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** Blood

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Nitrobenzene	EC50: 36 - 88.8 mg/L, 72h static (Pseudokirchneriella subcapitata) EC50: = 44.1 mg/L, 96h (Pseudokirchneriella subcapitata) EC50: 3.45 - 38.13 mg/L, 96h static (Pseudokirchneriella subcapitata)	LC50: 121 - 150 mg/L, 96h semi-static (Poecilia reticulata) LC50: 36 - 49 mg/L, 96h static (Lepomis macrochirus) LC50: 40.49 - 47.51 mg/L, 96h flow-through (Pimephales promelas) LC50: = 92.2 mg/L, 96h (Brachydanio rerio)	EC50 = 18 mg/L 15 min EC50 = 34.67 mg/L 30 min EC50 = 98 mg/L 24 h	EC50: = 33 mg/L, 48h (Daphnia magna) EC50: 25.6 - 42 mg/L, 48h Static (Daphnia magna)

**Persistence and Degradability** Soluble in water Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** . Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Nitrobenzene	1.9

### 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
Nitrobenzene - 98-95-3	U169	-

### 14. Transport information

#### DOT

UN-No UN1662  
 Proper Shipping Name NITROBENZENE  
 Hazard Class 6.1  
 Packing Group II

#### TDG

UN-No UN1662  
 Proper Shipping Name NITROBENZENE  
 Hazard Class 6.1  
 Packing Group II

#### IATA

UN-No UN1662  
 Proper Shipping Name NITROBENZENE  
 Hazard Class 6.1  
 Packing Group II

#### IMDG/IMO

UN-No UN1662  
 Proper Shipping Name NITROBENZENE  
 Hazard Class 6.1  
 Packing Group II

### 15. Regulatory information

#### International Inventories

Component	CAS-No	DSL	NDSL	TSCA	TSCA Inventory notification - Active-Inactive	EINECS	ELINCS	NLP
Nitrobenzene	98-95-3	X	-	X	ACTIVE	202-716-0	-	-

Component	CAS-No	IECSC	KECL	ENCS	ISHL	TCSI	AICS	NZIoC	PICCS
Nitrobenzene	98-95-3	X	KE-25965	X	X	X	X	X	X

#### Legend:

X - Listed '-' - Not Listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

## Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

Component	Canada - National Pollutant Release Inventory (NPRI)	Canadian Environmental Protection Agency (CEPA) - List of Toxic Substances	Canada's Chemicals Management Plan (CEPA)
Nitrobenzene	Part 4 Substance		

## Other International Regulations

### Authorisation/Restrictions according to EU REACH

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Nitrobenzene	-	Use restricted. See item 30. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	SVHC Candidate list - 202-716-0 - Toxic for reproduction (Article 57c)

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

<https://echa.europa.eu/authorisation-list>  
<https://echa.europa.eu/substances-restricted-under-reach>  
<https://echa.europa.eu/candidate-list-table>

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

Component	CAS-No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Nitrobenzene	98-95-3	Listed	Not applicable	Not applicable	Not applicable

Component	CAS-No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Nitrobenzene	98-95-3	Not applicable	Not applicable	Not applicable	Not applicable

## 16. Other information

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**Creation Date** 10-June-2014  
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**Revision Summary** This document has been updated to comply with the requirements of WHMIS 2015 to align with the Globally Harmonised System (GHS) for the Classification and Labelling of Chemicals.

### Disclaimer

The information provided in 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 guidance for safe handling, use, processing, storage,



transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

**End of SDS**