# SAFETY DATA SHEET

**Creation Date** 26-October-2009 **Revision Date** 17-January-2018 **Revision Number** 4

## 1. Identification

**Product Name** **Diphenylamine**

**Cat No. :** **O2611-100; O2611-500**

**CAS-No** 122-39-4
**Synonyms** Anilinobenzene; N-Phenylaniline; N-Phenylbenzeneamine

**Recommended Use** Laboratory chemicals.
**Uses advised against** Not for 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

**Manufacturer**
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: 001-703-527-3887

## 2. Hazard(s) identification

**Classification**

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

| | |
|---|---|
| **Acute oral toxicity** | Category 3 |
| **Acute dermal toxicity** | Category 3 |
| **Acute Inhalation Toxicity** | Category 3 |
| **Specific target organ toxicity - (repeated exposure)** | Category 2 |

**Label Elements**

**Signal Word**
Danger

**Hazard Statements**
Toxic if swallowed, in contact with skin or if inhaled
May cause damage to organs through prolonged or repeated exposure

**Precautionary Statements**
**Prevention**
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
Wear protective gloves/protective clothing/eye protection/face protection
**Response**
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
**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**
Very toxic to aquatic life with long lasting effects
Light sensitive

## 3. Composition/Information on Ingredients

| Component | CAS-No | Weight % |
|---|---|---|
| Diphenylamine | 122-39-4 | >95 |

## 4. First-aid measures

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

**Inhalation** Move to fresh air. 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. Immediate medical attention is required. If not breathing, give artificial respiration.

**Ingestion** Do not induce vomiting. Call a physician or Poison Control Center immediately.

**Most important symptoms/effects** No information available.
**Notes to Physician** Treat symptomatically

## 5. Fire-fighting measures

**Suitable Extinguishing Media** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Unsuitable Extinguishing Media** No information available

**Flash Point** 152 °C / 305.6 °F

**Method -** No information available

**Autoignition Temperature** 633 °C / 1171.4 °F

**Explosion Limits**
**Upper** No data available
**Lower** No data available
**Sensitivity to Mechanical Impact** No information available
**Sensitivity to Static Discharge** No information available

**Specific Hazards Arising from the Chemical**
Do not allow run-off from fire fighting to enter drains or water courses.

**Hazardous Combustion Products**
Carbon monoxide (CO) Carbon dioxide ($CO_2$) Nitrogen oxides (NOx)
**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 | 1 | 1 | N/A |

## 6. Accidental release measures

**Personal Precautions** Ensure adequate ventilation. Use personal protective equipment. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Avoid dust formation.

**Environmental Precautions** Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

**Methods for Containment and Clean Up** Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

## 7. Handling and storage

**Handling** Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Avoid dust formation. Do not breathe vapors/dust. Do not ingest.

**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

| Component | Alberta | British Columbia | Ontario TWAEV | Quebec | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|---|---|---|---|---|---|---|---|
| Diphenylamine | TWA: 10 mg/m³ | TWA: 10 mg/m³ | TWA: 10 mg/m³ | TWA: 10 mg/m³ | TWA: 10 mg/m³ | (Vacated) TWA: 10 mg/m³ | TWA: 10 mg/m³ |

**Legend**
*ACGIH - American Conference of Governmental Industrial Hygienists*
*OSHA - Occupational Safety and Health Administration*

*NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health*

**Engineering Measures**

Use only under a chemical fume hood. 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** 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.

**Hand Protection** Wear appropriate protective gloves and clothing to prevent skin exposure.

| Glove material | Breakthrough time | Glove thickness | Glove comments |
|---|---|---|---|
| Nitrile rubber<br>Neoprene<br>Natural rubber<br>PVC | 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 compatability, 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:** Particulates filter conforming to EN 143

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

**Environmental exposure controls**

Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

**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 before re-use. Wash hands before breaks and at the end of workday.

## 9. Physical and chemical properties

| | |
|---|---|
| **Physical State** | Solid |
| **Appearance** | White; Yellow; Brown |
| **Odor** | organic |
| **Odor Threshold** | No information available |
| **pH** | No information available |
| **Melting Point/Range** | 52 - 54 °C / 125.6 - 129.2 °F |
| **Boiling Point/Range** | 302 °C / 575.6 °F |
| **Flash Point** | 152 °C / 305.6 °F |
| **Evaporation Rate** | Not applicable |
| **Flammability (solid,gas)** | No information available |
| **Flammability or explosive limits** | |
| **Upper** | No data available |
| **Lower** | No data available |
| **Vapor Pressure** | 0.0003 hPa @ 20°C |
| **Vapor Density** | Not applicable |

| | |
|---|---|
| **Specific Gravity** | No information available |
| **Solubility** | Insoluble in water |
| **Partition coefficient; n-octanol/water** | No data available |
| **Autoignition Temperature** | 633 °C / 1171.4 °F |
| **Decomposition Temperature** | No information available |
| **Viscosity** | Not applicable |
| **Molecular Formula** | C12 H11 N |
| **Molecular Weight** | 169.23 |

## 10. Stability and reactivity

**Reactive Hazard** None known, based on information available

**Stability** Light sensitive, Air sensitive.

**Conditions to Avoid** Incompatible products. Excess heat. Avoid dust formation. Exposure to light. Exposure to air.

**Incompatible Materials** Strong oxidizing agents, Strong acids

**Hazardous Decomposition Products** Carbon monoxide (CO), Carbon dioxide ($CO_2$), Nitrogen oxides (NOx)

**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 |
|---|---|---|---|
| Diphenylamine | LD50 = 1120 mg/kg ( Rat ) | LD50 > 2000 mg/kg ( Rabbit ) | Not listed |

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

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|---|---|---|---|---|---|---|
| Diphenylamine | 122-39-4 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** Not mutagenic in AMES Test

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects,both acute and** No information available

**delayed**

**Endocrine Disruptor Information** No information available

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

## 12. Ecological information

**Ecotoxicity**

Very toxic 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 |
|---|---|---|---|---|
| Diphenylamine | EC50: = 1.5 mg/L, 72h (Scenedesmus subspicatus) | LC50: 3.47 - 4.14 mg/L, 96h flow-through (Pimephales promelas) | EC50 = 2.81 mg/L 5 min<br>EC50 = 3.46 mg/L 15 min<br>EC50 = 4.77 mg/L 30 min | EC50: 1.69 - 2.46 mg/L, 48h (Daphnia magna) |

**Persistence and Degradability** Insoluble in water Persistence is unlikely

**Bioaccumulation/ Accumulation** No information available.

**Mobility** . Is not likely mobile in the environment due its low water solubility.

| Component | log Pow |
|---|---|
| Diphenylamine | 3.4 |

## 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.

## 14. Transport information

**DOT**

**UN-No** UN3077
**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
**Hazard Class** 9
**Packing Group** III

**TDG**

**UN-No** UN3077
**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
**Hazard Class** 9
**Packing Group** III

**IATA**

**UN-No** UN3077
**Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s
**Hazard Class** 9
**Packing Group** III

**IMDG/IMO**

**UN-No** UN3077
**Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s
**Hazard Class** 9
**Packing Group** III

## 15. Regulatory information

**International Inventories**

| Component | DSL | NDSL | TSCA | EINECS | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diphenylamine | X | - | X | 204-539-4 | - | | X | X | X | X | X |

**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) |
|---|---|---|---|
| Diphenylamine | Part 1, Group A Substance | | |

## 16. Other information

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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**
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**End of SDS**