Material Safety Data Sheet

Aniline
MSDS# 01530

Section 1 - Chemical Product and Company Identification

MSDS Name:
Aniline
Catalog Numbers:
15819-0010, 15819-0050, 22173-0010, 22173-2500, 42342-0010, 42342-0050, 42342-5000, A/7240/PB08, A/7240/PB17, A/7280/PB08, A/7280/PB17
Synonyms:
Aminobenzene; Aniline oil; Benzenamine; Phenylamine.
Company Identification: Fisher Scientific UK
Bishop Meadow Road, Loughborough
Leics. LE11 5RG
For information in Europe, call: (01509) 231166
Emergency Number, Europe: 01509 231166

Section 2 - Composition, Information on Ingredients

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CAS#: 62-53-3
Chemical Name: Aniline
%
99
EINECS#: 200-539-3

Hazard Symbols:
T N
Risk Phrases:
23/24/25 40 41 43 48/23/24/25 50 68

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Toxic by inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect. Risk of serious damage to eyes. May cause sensitization by skin contact. Very toxic to aquatic organisms. Toxic: danger of serious damage to health by prolonged exposure through inhalation, contact with skin and if swallowed. Possible risk of irreversible effects. Hygroscopic (absorbs moisture from the air).
Potential Health Effects
Eye:
Causes severe eye irritation. May cause lacrimation (tearing), blurred vision, and photophobia. May cause chemical conjunctivitis and corneal damage.

Skin:
Causes skin irritation. Harmful if absorbed through the skin. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Vapors are readily absorbed through the skin.

Ingestion:
Harmful if swallowed. Aniline acts through an intermediate to change hemoglobin to methemoglobin. In one subject, 65 mg of aniline increased the methemoglobin level by 16% within 2 hours. Intense methemoglobinemia may lead to asphyxiation severe enough to injure the cells of the central nervous system. Pathologic findings in acute fatalities from aniline include chocolate color of the blood; injury to the kidney, liver and spleen; and hemolysis.

Inhalation:
Harmful if inhaled. Causes respiratory tract irritation. Methemoglobinemia is characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), rapid heart rate and chocolate-brown blood. Inhalation of aniline causes anoxia due to the formation of methemoglobin.

Chronic:
May cause liver and kidney damage. Repeated exposure may cause sensitization dermatitis. Chronic exposure may cause hemolysis of the red blood cells followed by stimulation of the bone marrow. May cause cyanosis - a blue-gray coloring of the skin and lips caused by a lack of oxygen. Animal studies have reported the development of tumors.

Section 4 - First Aid Measures

Eyes:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

Ingestion:
If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:
Absorption of this product into the body may cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Moderate degrees of cyanosis need to be treated only by supportive measures: bed rest and oxygen inhalation. Cleansing of the entire contaminated area of the body is of utmost importance. Do not administer alcohol in any form. Individuals with liver or kidney disorders, impaired cardiovascular status, or a history of alcoholism may be more susceptible to the effects of this product. Effects may be delayed. If cyanosis is severe, intravenous injection of Methylene Blue, 1mg/kg of body weight may be of value.

Section 5 - Fire Fighting Measures

General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Combustible liquid and vapor.

Extinguishing Media:
Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Section 6 - Accidental Release Measures
General Information:
Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Provide ventilation. Approach spill from upwind. Control runoff and isolate discharged material for proper disposal. Use water spray to cool and disperse vapors and protect personnel.

Section 7 - Handling and Storage

Handling:
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Keep away from heat and flame. Avoid breathing vapor or mist. Do not get in eyes. Avoid contact with skin and clothing.

Storage:

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits
CAS# 62-53-3:
United Kingdom, WEL - TWA: 1 ppm TWA; 4 mg/m3 TWA
United Kingdom, WEL - STEL: 3 ppm STEL; 12 mg/m3 STEL
United States OSHA: 5 ppm TWA; 19 mg/m3 TWA
Belgium - TWA: 2 ppm VLE; 7.7 mg/m3 VLE
France - VME: 2 ppm VME; 10 mg/m3 VME
Germany: 2 ppm TWA; 7.7 mg/m3 TWA
Germany: Skin absorber
Japan: 1 ppm OEL; 3.8 mg/m3 OEL
Malaysia: 2 ppm TWA; 7.6 mg/m3 TWA
Netherlands: 0.25 ppm MAC; 1 mg/m3 MAC
Russia: 0.1 mg/m3 CWA
Spain: 2 ppm VLA-ED; 7.7 mg/m3 VLA-ED

Personal Protective Equipment

Eyes:
Wear chemical splash goggles.

Skin:
Wear appropriate protective gloves to prevent skin exposure.

Clothing:
Wear appropriate protective clothing to prevent skin exposure.
Respirators:

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Color: oily - colorless to brown
Odor: amine-like - characteristic odor
pH: 8.1 (0.2M soln)
Vapor Pressure: 0.49 mm Hg @ 25 deg C
Viscosity: 4.435 cp @ 20 deg C
Boiling Point: 184 deg C @ 760 mmHg (363.20 F)
Freezing/Melting Point: -6 deg C (21.20 F)
Autoignition Temperature: 615 deg C (1,139.00 deg F)
Flash Point: 70 deg C (158.00 deg F)

Section 10 - Stability and Reactivity

Chemical Stability:
Stable under normal temperatures and pressures. May discolor on exposure to air and light.

Conditions to Avoid:
Light, ignition sources, excess heat, exposure to moist air or water,
prolonged exposure to air, confined spaces.

Incompatibilities with Other Materials
Strong oxidizing agents, strong acids, hexachloromelamine, trichloromelamine.

Hazardous Decomposition Products
Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 62-53-3: BW6650000
LD50/LC50:
CAS# 62-53-3: Dermal, guinea pig: LD50 = 1290 mg/kg;
Draize test, rabbit, eye: 102 mg Severe; Draize test, rabbit, eye: 20 mg/24H Moderate; Draize test, rabbit, skin: 20 mg/24H Moderate; Inhalation, mouse: LC50 = 175 ppm/7H; Oral, mouse:
LD50 = 464 mg/kg; Oral, rat: LD50 = 250 mg/kg; Skin, rabbit:
LD50 = 820 uL/kg; Skin, rat: LD50 = 1400 mg/kg.

Carcinogenicity:
Aniline -
ACGIH: A3 - Confirmed animal carcinogen with unknown relevance to humans
California: carcinogen, initial date 1/1/90
IARC: Group 3 (not classifiable)

Other:
See actual entry in RTECS for complete information.

Section 12 - Ecological Information
Ecotoxicity:
Bacteria: Phytobacterium phosphoreum: EC50 = 425-488 mg/L; 5,15 min;
Microtox test at 14.9-15.1°C
Water flea Daphnia: LC50 = 0.10 mg/L; 48 Hr; Unspecified
Fish: Rainbow trout: LC50 = 8.2 mg/L; Max. exposure = 7 days; Unspecified
Fish: Bluegill/Sunfish: 1020 ppm; 1 Hr; Unspecified
Other:
Dangerous to aquatic life in high concentrations.

Section 13 - Disposal Considerations
Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information
IATA
Shipping Name: ANILINE
Hazard Class: 6.1
UN Number: 1547
Packing Group: II
IMO
Shipping Name: ANILINE
Hazard Class: 6.1
UN Number: 1547
Packing Group: II
RID/ADR
Shipping Name: ANILINE
Hazard Class: 6.1
UN Number: 1547
Packing Group: II
USA RQ: CAS# 62-53-3: 5000 lb final RQ; 2270 kg final RQ

Section 15 - Regulatory Information
European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: T N
Risk Phrases:
R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R 40 Limited evidence of a carcinogenic effect.
R 41 Risk of serious damage to eyes.
R 43 May cause sensitization by skin contact.
R 48/23/24/25 Toxic : danger of serious damage to health by prolonged exposure through inhalation, contact with skin and if swallowed.
R 50 Very toxic to aquatic organisms.
R 68 Possible risk of irreversible effects.

Safety Phrases:
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 27 Take off immediately all contaminated clothing.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 46 If swallowed, seek medical advice immediately and show this container or label.
S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.
S 63 In case of accident by inhalation: remove casualty to fresh air and keep at rest.
WGK (Water Danger/Protection)

CAS# 62-53-3: 2

Canada

CAS# 62-53-3 is listed on Canada's DSL List

US Federal

TSCA

CAS# 62-53-3 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date:
6/04/1999

Revision #6 Date
11/07/2005

The information above is believed to be accurate and represents the
best information currently available to us. However, we make no
warranty of merchantibility or any other warranty, express or
implied, with respect to such information, and we assume no liability
resulting from its use. Users should make their own investigations to
determine the suitability of the information for their particular
purposes. In no event shall the company be liable for any claims,
losses, or damages of any third party or for lost profits or any
special, indirect, incidental, consequential, or exemplary damages
howsoever arising, even if the company has been advised of the
possibility of such damages.

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