

## Safety Data Sheet

### Aniline

#### 1. Product and Company Identification

Use: Intermediate for dyestuffs, Chemical used in synthesis and/or formulation of industrial products

Molecular formula:  $C(6)H(5)NH(2)$

Chemical family: Amine, Aromatic

Synonyms: ANILINE

#### 2. Hazards Identification

##### Emergency overview

DANGER:

POISON.

COMBUSTIBLE LIQUID.

CAUSES EYE, SKIN AND RESPIRATORY TRACT IRRITATION.

CONTAINS MATERIAL WHICH CAN CAUSE CENTRAL NERVOUS SYSTEM DAMAGE.

CAN CAUSE LIVER DAMAGE.

CAN CAUSE KIDNEY DAMAGE.

MAY ADVERSELY AFFECT THE DEVELOPING FETUS.

CONTAINS MATERIAL WHICH MAY CAUSE CANCER.

Use with local exhaust ventilation.

Wear a NIOSH-certified vapor respirator.

Wear NIOSH-certified chemical goggles.

Wear protective clothing.

State of matter: liquid

Colour: yellow

Odour: strong, amine-like

##### Potential health effects

##### Primary routes of exposure:

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

##### Acute toxicity:

Of pronounced toxicity after short-term inhalation. Of pronounced toxicity after short-term skin contact. Of high toxicity after single ingestion. There is a risk of damage to the blood (methemoglobinemia) after a single uptake.

**Irritation / corrosion:**

May cause severe damage to the eyes. Not irritating to the skin.

**Assessment other acute effects:**

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

**Sensitization:**

Sensitization after skin contact possible.

**Chronic toxicity:**

**Carcinogenicity:** Indication of possible carcinogenic effect in animal tests.

**Repeated dose toxicity:** Repeated inhalation exposure to low concentrations may affect certain organs. Repeated dermal exposure to small quantities may affect certain organs. Repeated oral exposure may to small quantities affect certain organs. After repeated administration the prominent effect is damage of the blood (methemoglobin formation).

**Reproductive toxicity:** The results of animal studies gave no indication of a fertility impairing effect.

**Teratogenicity:** In animal studies the substance did not cause malformations.

**Genotoxicity:** Mutagenic properties cannot be excluded on the basis of experimental data. The substance was mutagenic in a mammalian cell culture test system. The substance was mutagenic in studies with mammals.

**Medical conditions aggravated by overexposure:**

Data available do not indicate that there are medical conditions that are generally recognized as being aggravated by exposure to this substance/product. See MSDS section 11 - Toxicological information.

**Signs and symptoms of overexposure:**

Overexposure may cause:, cyanosis, methaemoglobinaemia, asphyxia

Symptoms can appear later.

### **Potential environmental effects**

#### **Aquatic toxicity:**

Very toxic (acute effect) to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

### **3. Composition / Information on Ingredients**

<b>CAS Number</b>	<b>Content (W/W)</b>	<b>Chemical name</b>
62-53-3	> 99.0 %	Aniline

### **4. First-Aid Measures**

#### **General advice:**

Remove contaminated clothing.

#### **If inhaled:**

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary.  
Immediate medical attention required.

#### **If on skin:**

Wash affected areas thoroughly with soap and water. Immediate medical attention required.

#### **If in eyes:**

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Immediate medical attention required.

#### **If swallowed:**

Rinse mouth and then drink plenty of water. Do not induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

#### **Note to physician**

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

## 5. Fire-Fighting Measures

Flash point:	76 °C (other, closed cup) Literature data.
Autoignition:	630 °C Literature data.
Lower explosion limit:	1.3 %(V)
Upper explosion limit:	11 %(V)
Flammability:	not readily ignited
Self-ignition temperature:	Based on its structural properties the product is not classified as self-igniting.

### **Suitable extinguishing media:**

Water spray, dry powder, carbon dioxide, foam

### **Hazards during fire-fighting:**

Vapors/fumes may contain traces of combustible substances.

### **Protective equipment for fire-fighting:**

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

### **Further information:**

Collect contaminated extinguishing water separately, do not allow to reach Sewage or effluent systems. If exposed to fire, keep containers cool by spraying with water. Suppress gases/vapours/mists with water spray jet.

## 6. Accidental release measures

### **Personal precautions:**

Breathing protection required. Avoid contact with the skin, eyes and clothing.

### **Environmental precautions:**

Substance/product is RCRA hazardous due to its properties.

### **Cleanup:**

Spills should be contained, solidified, and placed in suitable containers for disposal.

## 7. Handling and Storage

### **Handling**

#### **General advice:**

Ensure thorough ventilation of stores and work areas.



**Eye protection:**

Wear face shield or tightly fitting safety goggles (chemical goggles) if splashing hazard exists.

**Body protection:**

Protective suit

**General safety and hygiene measures:**

Eye wash fountains and safety showers must be easily accessible. Wear protective clothing as necessary to prevent contact. Avoid inhalation of vapours/mists. Employees should shower at the end of the shift.

**9. Physical and Chemical Properties**

Form:	Liquid
Odour:	Strong, amine-like
Colour:	Yellow
pH value:	No data available.
Melting point:	-6 °C ( 1,013 hPa)
Boiling point:	184.1 °C ( 1,013 hPa) Literature data.
Vapour pressure:	0.4 hPa ( 20 °C)
Density:	1.02 g/cm <sup>3</sup> ( 20 °C) Literature data.
Relative density:	1.02 ( 20 °C) Literature data.
Vapour density:	3.22
Partitioning coefficient N-octanol/water (log Pow):	0.91 ( 25 °C) (Directive 84/449/EEC, A.8)
Viscosity, dynamic:	4.35 mPa.s (20 °C) Literature data.
Particle size:	The substance / product is marketed or used in a non solid or granular form.
Solubility in water:	35 g/l ( 20 °C) Literature data.
Molar mass:	93.13 g/mol

**10. Stability and Reactivity****Conditions to avoid:**

Avoid extreme heat. Avoid direct sunlight. Avoid sources of ignition.

**Substances to avoid:**

strong oxidizing agents, acids

**Hazardous reactions:**

Strong exothermic reaction with acids.

**Decomposition products:**

Hazardous decomposition products: carbon monoxide, carbon dioxide, nitrogen oxides

**Thermal decomposition:**

No data available.

**Corrosion to metals:**

No corrosive effect on metal.

**Oxidizing properties:**

Based on its structural properties the product is not classified as oxidizing.

**11. Toxicological information****Acute toxicity****Oral:**

Type of value: LD50

Species: cat

Value: approx. 102 mg/kg (BASF-Test)

There is a risk of damage to the blood (methemoglobinemia) after a single uptake.

**Inhalation:**

Type of value: LC50

Species: rat

Value: 3.27 mg/l (OECD Guideline 403)

Exposure time: 4 h

The vapour was tested.

**Dermal:**

Type of value: LD50

Species: cat

Value: 254 mg/kg

## **Irritation / corrosion**

### **Skin:**

Species: rabbit

Result: non-irritant

### **Eye:**

Species: rabbit

Result: Risk of serious damage to eyes.

### **Sensitization:**

Human Maximization Test

Species: human

Result: sensitizing

Method: other

### **Repeated dose toxicity**

*Information on: Aniline*

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### **Aspiration Hazard:**

No aspiration hazard expected.

### **Other Information:**

Skin resorption hazard.

## **12. Ecological Information**

### **Fish**

Acute:

Fish test acute Flow through.

Oncorhynchus mykiss/LC50 (96 h): 10.6 mg/l

The statement of the toxic effect relates to the analytically determined Concentration. Literature data.

### **Aquatic invertebrates**

Acute:

OECD Guideline 202, part 1 semistatic

Daphnia magna/EC50 (48 h): 0.16 mg/l

The statement of the toxic effect relates to the analytically determined concentration. Literature data.

### **Aquatic plants**

Toxicity to aquatic plants:

OECD Guideline 201 green algae/EC50 (72 h): 175 mg/l

Nominal concentration. Literature data.

### **Microorganisms**

Toxicity to microorganisms:

OECD Guideline 209 activated sludge, industrial/EC20 (0.5 h): 2,800 mg/l  
Nominal concentration.

Inhibition of nitrification Bacteria/EC50 (2 h): < 1 mg/l  
Nominal concentration.

ISO DIS 9509 activated sludge, industrial/EC50 (2 h): 7 mg/l Nominal  
concentration.

### **Plant**

Toxicity to terrestrial plants:

OECD Guideline 208 Chinese cabbage/No observed effect concentration (14 d):  
0,0003 mg/l

other lettuce/EC50 (14 d): 33 mg/kg soil dw Literature data.

### **Soil living organisms**

Toxicity to soil dwelling organisms: other other blackworm/No observed effect  
concentration (28 d): 46, 5 mg/kg dw sediment

### **Degradability / Persistence**

#### **Biological / Abiological Degradation**

Test method: OECD 301B; ISO 9439; 92/69/EEC, C.4-C, activated sludge, domestic  
Degree of elimination: 90 % (26 d)

Evaluation: Readily biodegradable (according to OECD criteria).

### **Bioaccumulation**

Measured zebra fish Bioconcentration factor 2.6  
Literature data.

### **Environmental mobility:**

#### **Transport between environmental compartments:**

OECD Guideline 106 adsorption/water – soil log KOC: 2.13

#### **Other adverse effects:**

Due to the pH-value of the product, neutralization is generally required before  
discharging sewage into treatment plants.

## **13. Disposal considerations**

### **Waste disposal of substance:**

Incinerate or dispose of in a RCRA-licensed facility. Dispose of in a RCRA-licensed facility. Do not discharge into waterways or sewer systems without proper authorization.

**Container disposal:**

Empty containers with less than 1 inch of residue may be landfilled at a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers. If containers are not empty, they must be disposed of in a RCRA-licensed facility.

**RCRA:** U012

**14. Transport Information**

**Land transport**

USDOT

Hazard class: 6.1

Packing group: II

ID number: UN 1547

Hazard label: 6.1, EHSM

Proper shipping name: ANILINE

**Sea transport**

IMDG

Hazard class: 6.1

Packing group: II

ID number: UN 1547

**Safety Data Sheet**

**Aniline**

Hazard label: 6.1, EHSM

Marine pollutant: YES

Proper shipping name: ANILINE

**Air transport**

IATA/ICAO

Hazard class: 6.1

Packing group: II

ID number: UN 1547

Hazard label: 6.1

Proper shipping name: ANILINE

**15. Regulatory Information**

**Federal Regulations**

**Registration status:**

Chemical TSCA, US released / listed

**OSHA hazard category:** Chronic target organ effects reported; Skin and/or eye irritant; Acute target

organ effects reported; Toxic - oral; OSHA PEL established; ACGIH TLV established

**EPCRA 311/312 (Hazard categories):** Chronic; Acute

**CERCLA RQ CAS Number Chemical name**

5000 LBS 62-53-3 Aniline

1000 LBS 98-95-3; 108-95-2 nitrobenzene; phenol

10 LBS 71-43-2 Benzene

**Reportable Quantity for release:** 5,000 lb

**State regulations**

**CA Prop. 65:**

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE

CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

**16. Other Information**

Recommended use: dyes pesticides industrial chemicals catalyst

Suitable for use in industrial sector: chemical industry; Polymers industry

**NFPA Hazard codes:**

Health : 3 Fire: 2 Reactivity: 0 Special:

**HMIS III rating**

Health: 2 Flammability: 2 Physical hazard: 0

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