

Material Safety Data Sheet Aniline

SECTION 1.1 – PRODUCT IDENTIFICATION

Product Name : Aniline
Molecular Formula : $C_6H_5NH_2$
Molecular Weight : 93.13 g/mole
CAS No. : 62-53-3

SECTION: 1.2 – COMPANY IDENTIFICATION

Company Name: Indenta Chemicals (India) Pvt. Ltd.

Address: 117, The Summit Business Bay, Opp Cinemax, Off. Sir M.V. Road, Near WEH Metro Station, Andheri (E), Mumbai 400 093, India

Telephone #: +91-22-26849600

Fax #: +91-22-26849060

SECTION 2: COMPOSITION / INFORMATION ON INGREDIENTS

Name	CAS#	% by Weight
Aniline	62-53-3	100

Toxicological Data on Ingredients: Aniline: ORAL (LD50): Acute: 250 mg/kg [Rat.]. 464 mg/kg [Mouse]. DERMAL (LD50): Acute: 820 mg/kg [Rabbit.]. 1400 mg/kg [Rat].

SECTION 3: HAZARD IDENTIFICATION

Potential Acute Health Effects: Hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation. Severe overexposure can result in death.

Potential Chronic Health Effects: Slightly hazardous in case of skin contact (sensitizer). **CARCINOGENIC EFFECTS:** Classified A3 (Proven for animal.) by ACGIH. 3 (Not classifiable for human.) by IARC. **MUTAGENIC EFFECTS:** Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. **TERATOGENIC EFFECTS:** Not available. **DEVELOPMENTAL TOXICITY:** Not available. The substance may be toxic to blood, kidneys, liver, bladder, spleen, cardiovascular system, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a

SECTION 4: FIRST AID MEASURES

Eye Contact: Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention. Finish by rinsing thoroughly with running water to avoid a possible infection.

Indenta Chemicals (India) Pvt. Ltd.

Office: 117 The Summit Business Bay, Near WEH Metro Station, Opp. Cinemax Theatre, Off. Andheri Kurla Road, Andheri (E), Mumbai 400 093.
Phone : +91-22-2684 9600 | Fax : +91-22-2684 9060 | Email: indenta@indenta.com | Website : www.indenta.com

Unit 1: Plot No. 1405, GIDC Sarigam, Dist. Valsad, Gujarat – 396155

Unit 2: Building No. 73, Gala No. 7, Indian Corporation Compound, Village Gundavli, Mankoli Naka, Bhiwandi, Thane - 421302

Skin Contact: In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

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

Serious Inhalation: Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

SECTION 5: FIRE AND EXPLOSION DATA

Flammability of the Product: Combustible.

Auto-Ignition Temperature: 615°C (1139°F)

Flash Points: CLOSED CUP: 70°C (158°F).

Flammable Limits: LOWER: 1.3% UPPER: 23%

Products of Combustion: These products are carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂...).

Fire Hazards in Presence of Various Substances: Flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances: Risks of explosion of the product in presence of mechanical impact: Not available.

Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Ignites on contact with sodium peroxide + water. Aniline ignites spontaneously in presence of red fuming nitric acid. Sodium peroxide or potassium peroxide is spontaneously flammable with aniline. When heated to decomposition it emits toxic fumes.

Special Remarks on Explosion Hazards: Spontaneously explosive reactions occur with benzenediazonium -2-carboxylate, dibenzoyl peroxide, fluorine nitrate, nitrosyl perchlorate, red fuming nitric acid, peroxodisulfuric acid, and tetranitromethane. Addition of a drop of aniline to 1 gram of dibenzoyl peroxide leads to mildly explosive decomposition after a short delay. Addition of aniline to nitromethane renders it susceptible to initiation by a detonator. Aniline reacts with perchloric acid, and then formaldehyde to produce explosive and combustible condensed resin.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Small Spill: Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid.

Large Spill: Combustible material. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Neutralize the residue with a dilute solution of acetic acid. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

SECTION 7: HANDLING AND STORAGE

Precautions: Keep locked up.. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of

insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals, acids, alkalis.

Storage: Air and light sensitive. Store in light-resistance container. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection: Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: TWA: 7.6 (mg/m³) from ACGIH (TLV) [United States] SKIN TWA: 2 (ppm) from ACGIH (TLV) [United States] SKIN TWA: 2 [Canada] TWA: 7.6 (mg/m³) [Canada] TWA: 5 (ppm) from OSHA (PEL) [United States] TWA: 19 (mg/m³) from OSHA (PEL) [United States] TWA: 1 (ppm) [United Kingdom (UK)] TWA: 4 (mg/m³) [United Kingdom (UK)] Consult local authorities for acceptable exposure limits.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance: Liquid. (Oily liquid.)

Odor: Aromatic. Amine like.

Taste: Burning.

Molecular Weight: 93.13 g/mole

Color: Colorless.

pH (1% soln/water): Basic.

Boiling Point: 184.1°C (363.4°F)

Melting Point: -6°C (21.2°F)

Critical Temperature: 425.6°C (798.1°F)

Specific Gravity: 1.0216 (Water = 1)

Vapor Pressure: 0.1 kPa (@ 20°C)

Vapor Density: 3.22 (Air = 1)

Volatility: Not available.

Odor Threshold: 2.4 ppm

Water/Oil Dist. Coeff.: The product is more soluble in oil; log(oil/water) = 0.9

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol, diethyl ether.

Solubility: Soluble in cold water, hot water, methanol, diethyl ether.

SECTION 10: STABILITY AND REACTIVITY

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Reactive with oxidizing agents, metals, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Air and light sensitive. May darken on exposure to light or air. Incompatible with strong oxidizing agents, strong acids, bases, aluminum, fluorine, formaldehyde, iron, nitric acid, silver perchlorate, sodium

peroxide, sulfuric acid, zinc, hydrogen peroxide, benzenediazonium-2-carboxylate, boron trichloride, tetranitromethane, trichloronitromethane, diisopropyl peroxydicarbonate, hexachloromelamine, peroxomonosulfuric acid, albumin, iron salts, perchloric acid, nitrobenzene, alkalis, potassium peroxide, glycerine, fuming nitric acid, peroxydisulfuric acid, N-chloro compounds, N-bromides (e.g. n-bromosuccinimide), nitrosyl fluoride, toluene diisocyanate, performic acid. Formaldehyde + aniline reacts violently with 90% performic acid, acetic anhydride. Aniline + trichloronitromethane can produce a violent reaction. Aniline can react vigorously with oxidizing materials. Violent reactions can occur with peroxyformic acid, diisopropyl peroxydicarbonate, fluorine, trichloronitromethane, chlorosulfonic acid, peroxydisulfuric acid, FO₃Cl, nitric acid + N₂O₄ + sulfuric acid, b-propiolactone, AgClO₄.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals: WARNING: THE LC₅₀ VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD₅₀): 250 mg/kg [Rat.]. Acute dermal toxicity (LD₅₀): 820 mg/kg [Rabbit.]. Acute toxicity of the vapor (LC₅₀): 175 7 hours [Mouse].

Chronic Effects on Humans: CARCINOGENIC EFFECTS: Classified A3 (Proven for animal.) by ACGIH. 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. May cause damage to the following organs: blood, kidneys, liver, bladder, spleen, cardiovascular system, central nervous system (CNS).

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant, permeator), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: May affect genetic materials. May cause adverse reproductive effects. It may cause cancer. However, IARC has found inadequate evidence in humans. Human: passes through the placenta.

Special Remarks on other Toxic Effects on Humans:

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

BOD₅ and COD: Not available.

Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

SECTION 13: DISPOSAL CONSIDERATION

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

SECTION 14: TRANSPORT INFORMATION

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Aniline UNNA: 1547 PG: II

Special Provisions for Transport: Not available.

SECTION 15: OTHER REGULATORY INFORMATION

Federal and State Regulations: California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Aniline California prop. 65 (no significant risk level): Aniline: 0.1 mg/day (value) California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Aniline Connecticut hazardous material survey.: Aniline Illinois toxic substances disclosure to employee act: Aniline Illinois chemical safety act: Aniline New York release reporting list: Aniline Rhode Island RTK hazardous substances: Aniline Pennsylvania RTK: Aniline Minnesota: Aniline Massachusetts RTK: Aniline Massachusetts spill list: Aniline New Jersey: Aniline New Jersey spill list: Aniline Louisiana RTK reporting list: Aniline Louisiana spill reporting: Aniline California Director's List of Hazardous Substances: Aniline TSCA 8(b) inventory: Aniline TSCA 8(a) IUR: Aniline TSCA 8(d) H and S data reporting: Aniline: 10/4/92 SARA 302/304/311/312 extremely hazardous substances: Aniline SARA 313 toxic chemical notification and release reporting: Aniline CERCLA: Hazardous substances.: Aniline: 5000 lbs. (2268 kg)

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F). CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC): R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R36/38- Irritating to eyes and skin. R40- Possible risks of irreversible effects. S2- Keep out of the reach of children. S28- After contact with skin, wash immediately with plenty of water. S36/37- Wear suitable protective clothing and gloves. S46- If swallowed, seek medical advice immediately and show this container or label.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 2

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 2

Reactivity: 0

Specific hazard:

Protective Equipment: Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

SECTION 16: ADDITIONAL INFORMATION

This information is provided for documentation purposes only.

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