

MATERIAL SAFTY DATA SHEET

- 1.Chemical name/composition/code
- Chemical name: Aniline (hereinafter referred to as ANILINE)
- Synonyms: Aminobenzene, aminophen, blue oil, phenylamine, cyanol, benzamine, aniline oil, anyvim, benzenamine, benzidam, kyanol, krystallin, anyvim, arylamine,
- Molecular formula: C₆H₇N
- Molecular weight: 93.12
- CAS No.: 62-53-3
- UN No: 1547
- HS No:2921411000
- 2. Physical/chemical properties
- Purity:99.99% Min.
- Appearance: Colorless or yellowish oil liquid with pungent smell.
- Melting point($^{\circ}$ C): -6.2
- Boiling point(°C): 184.4
- Relative density(water=1): 1.02
- Relative vapor density(air=1): 3.22
- Saturated vapor tension(kPa): 2.00(77°C)



- Combustion value(kJ/mol): 3389.8
- Critical temperature(°C): 425.6
- Critical pressure(MPa): 5.30
- Flashing point(°C): 70
- Explosion limits%(V/V): 1.3-11.0
- Solubility : slightly soluble in water, soluble in ethanol, ether and benzene.
- 3. Handling/storage
- Handling precautions: Handling of ANILINE should be confined with adequate local exhaust, and executed as mechanized and automated as possible. Operators should go through special training and are required to abide by rules. It is recommended for operators to wear the filtering respirator (half mask), safety goggles, anti-infiltration of poison working overalls, and oil-proven rubber gloves. Smoking is forbidden in handling area. Explosion-proof ventilating system and equipment should be adopted. Guard against leakage of the vapor of ANILINE in handling area. Handle with care to prevent the damage of package and vessel. In empty vessels the residue of ANILINE may exist that is still hazardous.
- Storage precautions: ANILINE should be placed in a cool



ventilated warehouse with the temperature less than 30°C and relative humidity no more than 80%, away from fire and heat source. Kept in dark place. Perfect sealing of package is required with no contact with air. Keep ANILINE away from the contact with oxidant and acid. Never placed together with edible chemicals. Spare vessels should be maintained to meet the emergency of leakage of ANILINE in warehouse.

- No contact with: Strong oxidant, acid, acyl chloride and anhydride.
 No exposure to : Air and light.
- 4. Transportation
- Package: ISO tanks; tank car/tank truck; barrel with small opening; threaded glass bottle、 glass bottle with metal tapping cover, etc.
- Shipping precautions: It is necessary to check that there is no leakage for the tanks and vessels. It is also necessary to make sure that there is no leakage, no tumbling, no falling or damage to tanks and vessels of ANILINE during transportation. It is not allowed for ANILINE being transported together with acid, oxidant, food and food additives. On the journey, the shipping vehicles should be equipped with relative kinds of and some fire fighting tools and means to handle the leakage emergency. The shipping vehicles should run along with permitted



routes. The shipping vehicles should avoid the exposure to insolation, heavy rain and high temperature.

5. About risks

- Health hazard: ANILINE, being liable to be absorbed through skin, can cause methemoglobinemia, hemolytic anemia and damage to liver and kidney. Skin contact can cause eczema,etc.
- Environmental hazard: ANILINE is pollutant to surroundings, specially to waters.
- Exposure hazard: ANILINE is inflammable and poisonous.
- 6. First-aid measures
- Skin contact: Immediately take off clothes, wash/flush the skin with soapy water and water. See the doctor.
- Eye contact: Immediately have the eyelids flipped, and rinsed with plenty of running water or saline for at least fifteen (15) minutes. See the doctor.
- Inhaling: Immediately get away from the site to the place where fresh air available. Keep respiratory passage clear. In case of breathing problem, oxygen is given immediately. In case of respiratory arrest, carry out artificial respiration immediately. See doctor.
- Ingesting: Drink sufficient water, and make the ingester vomit.



7.Fire fighting

- Hazardous properties: Inflammable with fire and high temperature.
 Strong reaction of flammation will take place with acid, halogen, alcohol and amine.
- Hazardous combustion products: carbon monoxide, carbon dioxide, and nitrogen oxide.
- Fire fighting measures: Fire fighters must work by wearing gas masks in the distance of safety in the windward side of the site.
 Extinguishing agent: Water, foam, carbon dioxide and sand.
- Fire fighting tools of certain number and kinds must be equipped in the warehouse.
- 8. Emergency treatment for leakage
- Emergency treatment: Those who are working in the contaminated site should withdraw to safety area immediately. In coming to the site should be limited. Cut off the fire source. It is recommended that emergency response personnel should wear self support positive pressure gas mask and noddy suit. Avoid contacting with spilling matters. Try to cut off the leakage source. Prevent the spilling matters to the restricted space of sewer and flooding ditch. A small amount of leakage: Adsorb or absorb the spilling matters with sand or



other nonflammable extinguishing agent. A large amount of leakage: Make dykes and dams or dig a pit to hold temporarily. Spray water or foam to cool and dilute the gas, protect the personnel at the site. Recover and ship ANILINE to waste treatment place by pumping it from the pit into the tank truck or special collecting vessel.

- 9. Contact control/personnel protection
- Monitoring methods: Naphthyl ethylenediamine hydrochloride colorimetry; solvent desorption – gas chromatography
- Engineering control: Seal the working area with sufficient local ventilation. Supply the site with safety shower and eye-wash equipment.
- Breathing system protection: Wear filer masks (half mask) at the site where contact with gas of ANILINE is possible. Wear air breathing apparatus in response to emergency treatment.
- Eye protection: Safety glasses (goggles);
- Body protection: Noddy suit;
- Hand protectin: Anti-oil rubber gloves;
- Other precautions: No smoking, drinking or ingestion at the site is allowed. Change the contaminated working suit in time. No drink of alcohol before or after work. Take shower by lukewarm water. Pay



attention to monitoring hazardous working conditions. Make regular medical examination.

- 10. Wastes treatment
- Treatment methods: Burn the wastes. Remove nitrogen oxides discharged from incinerator by washer.