

Aniline

Version 2.0

Revision Date 04/30/2015

Ref. 13000000033

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Aniline
Product Use : Chemical intermediate, For industrial use only.

Restrictions on use : Do not use product for anything outside of the above specified uses
Manufacturer/Supplier : First Chemical Corporation
1001 Industrial Road
Pascagoula, MS
39581
United States of America

Product Information : +1-228-762-0870
Transport Emergency : CHEMTREC: 1-800-424-9300

Other information : professional use

SECTION 2. HAZARDS IDENTIFICATION

Product hazard category

Flammable liquids	Category 4
Acute toxicity (Oral)	Category 4
Acute toxicity (Inhalation)	Category 4
Acute toxicity (Dermal)	Category 4
Serious eye damage/eye irritation	Category 1
Skin sensitisation	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 2
Specific target organ toxicity - repeated exposure	Category 1

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Label content

Pictogram

:



Signal word

: Danger

Hazardous warnings

: Combustible liquid.
Harmful if swallowed, in contact with skin or if inhaled
May cause an allergic skin reaction.
Causes serious eye damage.
Suspected of causing genetic defects.
Suspected of causing cancer.
Causes damage to organs through prolonged or repeated exposure. (Blood, hematopoietic system)

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Hazardous prevention measures : Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/ eye protection/ face protection.
Use personal protective equipment as required.
IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/ attention.
Immediately call a POISON CENTER/doctor.
Rinse mouth.
If skin irritation or rash occurs: Get medical advice/ attention.
Wash contaminated clothing before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

May cause sensitisation of susceptible persons by skin contact., May cause cyanosis.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration

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Aniline	62-53-3	>99%
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SECTION 4. FIRST AID MEASURES

- General advice : Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
- Inhalation : Remove from exposure, lie down. Oxygen or artificial respiration if needed. Call a physician immediately.
- Skin contact : Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Consult a physician. Wash contaminated clothing before re-use.
- Eye contact : Rinse immediately with plenty of water and seek medical advice.
- Ingestion : If swallowed, induce vomiting immediately, as directed by medical personnel. Never give anything by mouth to an unconscious person. Consult a physician.
- Most important symptoms/effects, acute and delayed : The absorption of this product into the body may lead to the formation of methaemoglobine that, in sufficient concentration, causes cyanosis.
- Protection of first-aiders : If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- Notes to physician : Absorption of this product may lead to the formation of methemoglobin which, in sufficient concentration, causes cyanosis. Thorough cleansing of the entire contaminated area including scalp and nails, is of utmost importance. Moderate cyanosis can be treated by supportive measures such as bed rest and oxygen inhalation. Severe cyanosis may require intravenous injection of methylene blue, one milligram per kilogram of body weight. Cyanocobalamin (Vitamin B12), one milligram intramuscularly, may speed recovery. Methylene blue is contraindicated if the patient has confirmed or suspected glucose-6-phosphate dehydrogenase deficiency. In these cases Intravenous fluids and blood transfusions may be indicated.

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SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray, Dry powder, Carbon dioxide (CO₂), Alcohol-resistant foam
- Unsuitable extinguishing media : No applicable data available.
- Specific hazards : Vapours may form explosive mixtures with air. Vapours or gases may travel considerable distances to ignition source and flash back. Heating above 200°C (392°F) or in fire conditions, toxic decomposition products may be formed causing severe eye, nose, throat, and lung irritation.
Hazardous combustion products: Carbon monoxide nitrogen oxides
- Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.
- Further information : Evacuate personnel and keep upwind of fire. Cool containers/tanks with water spray. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Shut off source of fuel, if possible and without risk.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- Safeguards (Personnel) : Ensure adequate ventilation. Use personal protective equipment. Evacuate personnel to safe areas. Remove all sources of ignition.
- Environmental precautions : Prevent product from entering drains. Do not contaminate surface water.
- Spill Cleanup : Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Shovel into suitable container for disposal. Use mechanical handling equipment.
- Accidental Release Measures : Dispose of in accordance with local regulations.
This material is an ICR (ignitable, corrosive, reactive) substance under CERCLA. Unless released material is immediately cleaned up for

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reprocessing, recycling, or reuse, a release of 100 lbs. may trigger the reporting requirements of CERCLA Section 103.

SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Plan first aid action before beginning work with this product. Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Use product only in closed system. Use only in area provided with appropriate exhaust ventilation. Wear personal protective equipment.
Wash hands before breaks and immediately after handling the product. When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing. Wash contaminated clothing before re-use.
- Handling (Physical Aspects) : Keep away from open flames, hot surfaces and sources of ignition. No smoking.
- Dust explosion class : No applicable data available.
Storage : Keep containers tightly closed in a dry, cool and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in original container.
Keep away from: Oxidizing agents Acids Flammable materials
No decomposition if stored and applied as directed.
- Storage period : No applicable data available.
- Storage temperature : -5 - 32 °C (23 - 90 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Engineering controls : Ensure adequate ventilation.
- Personal protective equipment
Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. In case of insufficient ventilation, wear suitable respiratory equipment.
- Hand protection : Material: Neoprene
Additional protection: butyl-rubber
- Eye protection : Tightly fitting safety goggles Face-shield

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- Skin and body protection : Complete head face and neck protection
Complete suit protecting against chemicals.
Solvent-resistant apron and boots
- Protective measures : Avoid exposure - obtain special instructions before use.

Exposure Guidelines Exposure Limit Values

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Permissible exposure limit:	(OSHA)	5 ppm	19 mg/m ³	8 hr. TWA
TLV	(ACGIH)	2 ppm	TWA	
AEL *	(DUPONT)	2 ppm	8 & 12 hr. TWA, Skin	
o-Toluidine				
Permissible exposure limit:	(OSHA)	5 ppm	22 mg/m ³	8 hr. TWA
TLV	(ACGIH)	2 ppm	TWA	
AEL *	(DUPONT)	0.1 ppm	8 & 12 hr. TWA, Skin	

Biological Exposure Indices

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BEI	(ACGIH)	Aniline, with hydrolysis/Urine Sampling time: End of shift.	
BEI	(ACGIH)	aniline/Release from hemoglobin in blood Sampling time: End of shift.	
BEI	(ACGIH)	50 mg/l p-Aminophenol, with hydrolysis/Urine Sampling time: End of shift.	

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

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Physical state	: liquid
Form	: liquid, oily
Color	: colourless, yellow, brown, Darkens over time.
Odor	: sweet, amine-like
Odor threshold	: No applicable data available.
pH	: alkaline
Melting point/freezing point	: Solidification point -6 °C (21 °F)
Boiling point/boiling range	: Boiling point/boiling range 184.4 °C (363.9 °F) at 1,013 hPa
Flash point	: 70 °C closed cup Method: Tag closed cup - TCC
Evaporation rate	: No applicable data available.
Flammability (solid, gas)	: No applicable data available.
Upper explosion limit	: 11.0 vol%
Lower explosion limit	: 1.3 vol%
Vapor pressure	: 1.3 hPa at 34.8 °C (94.6 °F)
Vapor density	: 3.22 at 20 °C (68 °F) (Air = 1.0)
Specific gravity (Relative density)	: 1.02 at 20 °C (68 °F)
Water solubility	: partly soluble
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.

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Ignition temperature	:	615 °C 1,013 hPa
Decomposition temperature	:	No applicable data available.
Viscosity, kinematic	:	4.35 mm ² /s at 20 °C (68 °F)
Viscosity	:	No applicable data available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No applicable data available.
Chemical stability	:	Stable at normal temperatures and storage conditions.
Possibility of hazardous reactions	:	Hazardous polymerisation does not occur.
Conditions to avoid	:	Strong oxidizing agents such as nitric acid or sodium peroxide may cause aniline to burn spontaneously. Hexachloromelamine and trichloromelamine react violently with aniline, and if brought together in confined conditions, will explode or catch fire and emit toxic vapors.
Incompatible materials	:	Strong oxidizing agents
Hazardous decomposition products	:	Nitrogen oxides (NO _x), Carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION

INHALATION

LC50, rat (4 hr): >552 ppm. 7-53 ppm for several hours in humans caused slight symptoms of methemoglobinemia.

EYE CONTACT

53.3/110, severely irritating to rabbit eyes.

SKIN CONTACT

LD50, guinea pig: 1290 mg/kg, moderately toxic.

LD50, rabbit: 820-1540 mg/kg, moderately toxic.

Primary irritation index: 1.0/8.0, slightly irritating.

Skin sensitizer in animals. Absorbed through the skin.

INGESTION

LD50, rat: 442 mg/kg, moderately toxic.

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GENOTOXICITY

Not mutagenic in bacterial cells. Caused damage to chromosomes in animals but not in animal cells in culture. Mixture of negative and equivocal results in cell transformation assays.

TARGET ORGANS

Spleen, bone marrow, liver, heart, central nervous system, bladder, kidneys, blood and stomach.

DEVELOPMENTAL TOXICITY

Gavage study, rat (days 7-20 of gestation or day 7 through parturition).

NOAEL for maternal and developmental toxicity = 30 mg/kg.

LOAEL for maternal and developmental toxicity = 100 mg/kg.

(Decreased weight gain and red blood cell changes in maternal rats and offspring; no selective toxicity to offspring.)

SUBCHRONIC TOXICITY

Inhalation study, dog, rat, mouse, and guinea pig (6 months):

LOAEL = 5 ppm (methemoglobinemia noted.)

CHRONIC TOXICITY

Dietary study, rat (103 weeks):

LOAEL = 3000 ppm in diet, ca. 150 mg/kg (Tumors of the spleen and other organs noted.)

Dietary study, mouse (103 weeks):

NOAEL = 12,000 ppm in diet, ca. 2,000 mg/kg (the highest dose tested).

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

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96 hr LC50 Sand shrimp: 29.4 mg/L, slightly toxic.

96 hr LC50 Rainbow trout: 10.6 - 41.0 mg/L, slightly toxic.

96 hr EC50 Green algae: 19 mg/L, slightly toxic.

48 hr EC50 Daphnia magna: 0.25 mg/L, highly toxic.

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48 hr LC50 Midge: >219 mg/L, practically nontoxic.
96 hr LC50 Amphipod: 2.3 mg/L moderately toxic.
96 hr LC50 Fathead minnow: 68.6 mg/L, slightly toxic.
96 hr LC50 Bluegill: 49 mg/L, slightly toxic.

In a flow through chronic toxicity test in *Daphnia magna*, the NOEL was 0.016 mg/L and the 21 day EC50 for immobilization was 0.044 mg/L.

Environmental Fate

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Biodegradability : 90 % OECD Test Guideline 301D
Readily biodegradable

Bioaccumulation : Bioconcentration factor (BCF) : 2.6
Bioaccumulation is unlikely.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product : Dispose of as special waste in compliance with local and national regulations.
Do not dispose of waste into sewer.

Contaminated packaging : If recycling is not practicable, dispose of in compliance with local regulations.

SECTION 14. TRANSPORT INFORMATION

DOT UN number : 1547

Proper shipping name : Aniline
Class : 6.1
Packing group : II
Labelling No. : 6.1
Reportable Quantity : 5000 lbs Aniline

IATA_C UN number : 1547

Proper shipping name : Aniline

Class : 6.1
Packing group : II

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IMDG	Labelling No.	: 6.1
	UN number	: 1547
	Proper shipping name	: ANILINE
	Class	: 6.1
	Packing group	: II
	Labelling No.	: 6.1
	Marine pollutant	: yes (Aniline)

Marine pollutant

SECTION 15. REGULATORY INFORMATION

TSCA	: On the inventory, or in compliance with the inventory
SARA 313 Regulated Chemical(s)	: Aniline
PA Right to Know Regulated Chemical(s)	: Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Aniline
NJ Right to Know Regulated Chemical(s)	: Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Aniline
CERCLA Reportable Quantity	: 5000 lbs Based on the percentage composition of this chemical in the product.: Aniline
SARA Reportable Quantity	: 5000 lbs Based on the percentage composition of this chemical in the product.: Aniline
California Prop. 65	: WARNING! This product contains a chemical known to the State of California to cause cancer. Aniline WARNING! This product contains a chemical or chemicals known to the State of California to cause cancer. Aniline, o-Toluidine

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SECTION 16. OTHER INFORMATION

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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