Section 1 - Product and Company Identification

Chemical name： Aniline
Other names：--
Product use：Laboratory reagent, rubber accelerator, antioxidants, dye intermediates, photographic chemicals, medicine, explosives, herbicide,
Maker、Importer or Supplier's name：San Fu Chemical Co., Ltd., Kaohsiung Plant
Maker、Importer or Supplier's address：45, Chung-Heng St., Hsiao Kang Dist., Kaohsiung, Taiwan 812
Supplier’s phone：07-8713471 Emergency phone：07-8713471
FAX.：07-8714233

Section 2 - Hazards Identification Information

Chemical Hazard Classification：

1.	Flammable Liquid	Category 4
2.	Acute Toxicity	Category 3 (Ingestion)
3.	Acute Toxicity	Category 2 (Inhalation)
4.	Skin Corrosion/Irritation	Category 2
5.	Skin Sensitization	Category 1
6.	Specific Target Organ Toxicity Repeated Exposure	Category 1
7.	Hazardous to the Aquatic Environment (Acute)	Category 1

The Most Important Hazards and effect

Label element：

- Hazard symbol：Skull and Crossbones, Health Hazard, Environment, Corrosion

- Signal word：Danger

Hazard statement：

1. Flammable Liquid
2. Harmful if swallowed
3. Fatal if inhaled
4. May cause skin sensitization
5. Repeated and prolonged overexposure may cause target organ effects
6. Very toxic to aquatic organisms

Precautionary statement：

1. Do not inhale of vapors, mists, or sprays of this product
2. If contact with eyes, flush with plenty of water, and get medical attention immediately
3. Prevent the release of hazardous substances into our environment
4. Wear proper protective clothes, gloves, goggles/mask

Others Hazard：--

Section 3 - Composition/Information On Ingredients

Pure Substance：

Chemical name：Aniline
Synonyms：Aminobenzene, Aniline oil, Phenylamine, Aniline Technical Special
CAS No.：62-53-3
Ingredient contributing to the hazard(%)：95~100 % w/w

mixture:

Hazardous ingredients Chinese and English names	CAS No.	Concentration or concentration range (Percentage of ingredients)
N/A	N/A	N/A

Section 4 - First Aid Measures

The First-aid Information：

■ Inhalation：

1. Remove pollutant or move patient to fresh air.
2. If not breathing, give artificial respiration or CPR by trained personnel.
3. Get the medical attention immediately.

■ Skin Contact：

1. Flush water for at least 30 minutes.
2. Remove contaminated clothing as needed.
3. Wash affected area thoroughly with soap and water.
4. Thoroughly clean contaminated clothes before reuse or disposal.

■ Eye Contact：

1. Flush eyes with plenty of water for at least 30 minutes.
2. Try to not contaminate unaffected area.
3. Get medical attention immediately.

■ Ingestion：

1. Do not give anything by mouth to an unconscious person.
2. Wash mouth thoroughly.
3. Do not induce vomiting.
4. Drink 240~300ml water to dilute the substances.
5. If not breathing, give artificial respiration (Do not give mouth to mouth resuscitation.) by trained personnel.
6. If pulse stops, give CPR.
7. Get medical attention immediately.

The Most Important Symptoms and Hazardous Effects：Aniline is a blood toxin, causing hemoglobin to convert to methemoglobin, resulting in cyanosis. Lengthy or repeated exposures may result in decreased appetite, anemia, weight loss, nervous system affects, and kidney, liver and bone marrow damage.

Protection of First-aiders：Level C protective equipments

Notes to a Physician：If swallow, gastric lavage or activated carbon may be considered.

Section 5 - Fire Fighting Measures

Extinguishing Media：Water spray, carbon dioxide, dry chemical powder or appropriate foam

Specific Hazards when Fire-fight：

1. Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.

2. Containers may explode when overheated.
Specific Fire-fighting Procedure： 1. Evacuate area of leak or spill. 2. Fight fire from protected location or safe distance. 3. Approach fire from upwind. Stay away from the low or confined area. 4. Do not inhale chemical or fumes. 5. Do not enter fire area without wearing proper protective gears. 6. Use water spray to blanket fire, cool fire exposed containers, and to flush non-ignited spills or vapors away from fire. 7. If safe to do so, move undamaged containers from fire area.
Specific Protection of Firefighters：In the event of a fire, wear protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Section 6 - Accidental Release Measures

Personal Precautions： 1. Restrict access to area until completion of clean up. 2. Ensure clean up is inducted by trained personnel only. 3. Wear proper personal protective gears.
Environmental Precautions： 1. Well-ventilated the contaminated area. 2. Remove all sources of ignition. 3. Notify the occupational safety health unit or environmental protection unit.
Methods for Cleaning up： 1. Prevent contacting with the spills or leaks. 2. Prevent entry into sewers or confined area. 3. Stop leaking if safe to do so. 4. Absorb with dry earth or sand. Dike if necessary. 5. Small Spill: Cover and soak up with inert absorbent material. The waste absorbent material is hazardous as the product. Store in the appropriate containers with covers and hazardous label. Small amounts of residue may be flushed with plenty of water. 6. Large Spill: Contact the fire department, emergency management agency, or the suppliers immediately.

Section 7 - Handling and Storage

Handling： 1. Ensure all employees receive appropriate training courses for handling the hazardous materials. 2. Wear appropriate personal protective equipments. 3. Do not operate alone. Must assist by someone who is trained and knows how to first-aid. 4. If possible, use a confined process. 5. In the event that a ventilation system fails, report to the supervisor immediately if experience toxic symptoms or sings. Avoid contact this substance or polluted equipments if not wear proper protective gears. 6. Remove all sources of ignition. 7. Put up no smoking signs

8. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.
9. Separate from incompatibles.
10. Do not pour unused portion back into the container.
11. Handling amount of usage should be kept to a minimum.
12. Consider install equipment to prevent fire and spilling.
13. Label the container, and keep the container closed while not use.
14. Protect against physical damage.
15. Store in cool, dry, and well-ventilated area. Dark area is preferred. Keep away from any sources of ignition.
16. Keep away from oxidants, corrosion materials, and other incompatible materials.

Storage：

1. Store in a cool fireproof location.
2. Use ground, anti-spark ventilation system, qualified explosion-proof equipments, and safe electrical power system.
3. The flooring should be impermeable to the product.
4. Make a threshold at the door and build a slope or a groove in front of the door to enable the fluid leakage to be emitted to a safe place.
5. Clearly labeled in the entrance of the storage place, no obstacle. Only allowed trained personnel access.
6. Separate the working area, eating area, and protective gear storage place.
7. Check and maintain for the proper labels and physical condition of the containers.
8. Store in the suggested temperature. If necessary, install the temperature alarm.
9. The storing basin shall be based on the ground with its base completely sealed from leakage, and shall be surrounded by a fluid-protective dike capable of carrying the entire volume of storage.
10. Careful handle the empty containers because there may be residue left inside.
11. Working area and storage area should have proper fire extinguishers and equipments to deal with the leakage emergency.

Section 8 - Exposure Controls & Personal Protection

Engineering measures：Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Control parameters			
TWA	STEL	Ceiling	Biological standards
2ppm (SKIN)	4ppm (SKIN)	--	50mg（Ns）per gram of creatinine in urine; 1.5%（B、Ns、Sq）high heme-iron in the blood

Personal protective equipment：

- ■ Respiratory Protection：If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard.
- ■ Hand Protection：Wear impervious protective gloves. (Butyl Rubber, PVA, Barricade, Responder)
- ■ Eye Protection：Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

■ Skin and Body Protection：Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Hygiene measures： 1. Change contaminated clothing. Dispose or reuse after appropriate cleaning. Warning the cleaner for the chemical contaminated. 2. Eating or smoking is prohibited. 3. Wash hands thoroughly after working with the substance. 4. Maintain the cleanness of the workplace.

Section 9 - Physical & Chemical Properties

Appearance：oily liquid. Darkens on exposure to light or air.	Odor：weakly amine
Color：colorless	Melting Point: -6.03℃
pH value：8.1 (0.2M water solution)	Boiling point/boiling range：184～184.5 ℃
Flammability: --	Flash point： 70℃
Decomposition temp：70℃	Test method：closed
Auto ignition temp：615 ℃(crystals)	Explosion properties：1.3% ~ 11.0%
Vapor pressure：0.66 mmHg(25℃)	Vapor density：3.22（air=1）
Density：1.0235（water=1）	Solubility：3.5 g/100ml（water）
log Kow：0.9	Evaporation Rate：＜1 (Butyl Acetate=1)

Section 10 - Stability & Reactivity Data

Stability：Stable under ordinary conditions of use and storage. Discolors on exposure to light.
Possible hazardous reactions under specific conditions：Oxidizing agents, reducing agents, bases, acetic acid, nitric acid, sulfuric acid, May form explosive/incompatible mixtures with a wide range of substances., hydrogen peroxide, chromyl chloride, nitrosyl perchlorate, hexachloromelamine, peroxomonosulfuric aicd, chromic anhydride, sulfur dischloride, carbon potassium-tert-butoxide.
Conditions to avoid：Expose to air, heat, flames, ignition sources and incompatibles.
Materials to avoid： Strong acids and strong oxidizers, albumin, solutions of iron, zinc, aluminum, toluene diisocyanate, and alkalis. Ignites spontaneously in the presence of red fuming nitric acid, and with sodium.
Hazardous decomposition products：Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.

Section 11 - Toxicological Information

Route of exposure：skin, inhalation, eye, ingestion
Symptoms：Symptoms may include bluish discoloration of lips and tongue, severe headache, nausea, confusion, dizziness, shock, respiratory paralysis, death.
Immediate Toxicity： 1. Skin：May be absorbed through skin. Symptoms of skin absorption parallel those from

inhalation exposure. May cause skin irritation. Local contact may cause dermatitis.

2. Inhalation：Toxic. Affects ability of blood to carry oxygen. Symptoms may include bluish discoloration of lips and tongue, severe headache, nausea, confusion, dizziness, shock, respiratory paralysis, death.
3. Eye：Vapor is an eye irritant. May cause tearing, blurred vision. Splashes may cause corneal damage.
4. Ingestion：Toxic. Lethal dose may be as little as one gram. Symptoms of ingestion parallel those of inhalation exposure.
   - LD_{50}: 250mg/kg (Rat, Ingestion)
   - LC_{50}: 250ppm/4H (Rat, inhalation)
   - irritation skin rabbit: 20 mg/24H moderate; irritation eye rabbit 102 mg severe

Specific effects：

- Aniline is a blood toxin, causing hemoglobin to convert to methemoglobin, resulting in cyanosis. Lengthy or repeated exposures may result in decreased appetite, anemia, weight loss, nervous system affects, and kidney, liver and bone marrow damage. Any exposure may cause an allergic skin reaction.
- Investigated as a tumorigen, mutagen, and reproductive effector. Carcinogenic determination: limited evidence in experimental animals (IARC 27, 54, 1982). Aniline is listed by the International Agency for Research on Cancer (IARC) in Category 3, i. e., "Cannot be classified as to its carcinogenicity in humans." (IARC, Supplement 4, 1982).

Section 12 - Ecological Information

Ecotoxicology：

- LC_{50}(fish)：134mg/l/96H
- EC_{50}(Aquatic Invertebrates)：0.1-0.65mg/l/48H（Cyclops）
- Bioconcentration factor (BCF)：<148

Persistence and degradability：

- Half-Life (Air)：3.3 hr.
- Half-Life (Water surface)：52~520 hr.
- Half-Life (Groundwater)：--
- Half-Life (Soil)：--

Bioaccumulative potential：This material is not expected to significantly bioaccumulate.

Mobility in soil：When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material may leach into groundwater. When released into water, this material is expected to readily biodegrade.

Other adverse effects：When released into water, this material is expected to have a half-life between 10 and 30 days. This material has an experimentally-determined bioconcentration factor (BCF) of less than 100. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to be readily degraded by photolysis. When released into the air, this material is expected to have a half-life of less than 1 day. When released into the air, this material is not expected to adversely affect the ozone layer.

Section 13 - Disposal Considerations

Methods of disposal：

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Section 14 - SDS Transport Information

UN classification number：1547
Proper D.O.T Shipping Name：Aniline
Hazard Class：6.1
Packing Group：II
Marine pollution：n/s
Specific precautionary transport measures and conditions：--

Section 15 - Regulatory Information

Regulations： 1. Labor Safety and Health Facilities Regulations 2. Toxic Chemical Substances Labeling and Safety Data Regulations 3. Road Traffic Safety Regulations 4. Toxic Chemicals Management Regulations 5. Permissible Exposure Limits of Hazardous Substances in the Work Environment 6. Industrial Waste Storage and Disposal Regulations 7. Public Hazardous Materials and Flammable Pressurized Gases Establishment Standards and Safety Control Regulations.

Section 16 - Other Information

Literature references	1. CHEMINFO Data Bank, CCINFO CD, 2005-2 2. HAZARDTEXT Data Bank, TOMES PLUS CD, Vol. 63, 2005 3. RTECS Data Bank, TOMES PLUS CD, Vol. 63, 2005 4. HSDB Data Bank, TOMES PLUS CD, Vol. 63, 2005 5. ChemWatch Data Bank, 2004-4 6. Chemical hazards Data Bank, Env. Portection Administration, R.O.C. (Taiwan)		
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Issue date	2020/05/05	Revision	6

Remarks	Symbols Explanations: "--" No information is available at this time. "/" Not applicable to this substance.

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