1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY.

Product Name
Tertiarybutylamine

Formula
C₄H₉NH₂

Company Identification
See footer.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation
Tertiarybutylamine

Components/Impurities
None

EC No.
200-888-1

CAS No.
75-64-9

3. HAZARDS IDENTIFICATION

Flammable, toxic, and corrosive liquid. Skin contact can cause severe burns. Fumes may cause skin and eye irritation. Avoid inhalation of fumes.

4. FIRST AID MEASURES

Prompt medical attention is required in all cases of exposure to Tertiarybutylamine and its by-products. Rescue personnel should be equipped with appropriate protective equipment (e.g. Self-contained breathing apparatus) to prevent unnecessary exposure and must be aware of the fire and explosion potential of Tertiarybutylamine.

Skin
Contact may cause severe burns. Corrosive(Rabbit, 24 hr. exposure and 3 Min. DOT criteria). Fumes may cause irritation. Immediately flush affected areas with large quantities of water. Remove affected clothing as rapidly as possible if not stuck to skin.

Eyes
Contact may cause severe burns. Corrosive(Rabbit, 24 hr. exposure). Fumes may cause irritation. Persons with potential exposure to Tertiarybutylamine should not wear contact lenses. Flush contaminated eyes with large quantities of water for at least 15 minutes. Hold eyelids open to ensure complete flushing.

Inhalation
May cause irritation. Considered moderately toxic by inhalation(Rat LC50- 3.8 mg/L). Move exposed personnel to an uncontaminated area quickly using self-contained breathing apparatus. If breathing is difficult, give oxygen. If breathing has stopped, apply artificial respiration. Medical assistance should be sought immediately. Keep victim warm and quiet.

5. FIRE-FIGHTING MEASURES

Extinguishing Media
“Alcohol” foam, dry chemical, carbon dioxide or any Class B extinguishing agent. Without risk, stop flow of this compound to the fire. Without risk, and if safe to do so, move container(s) away from fire area.

Exposure Hazards
Carbon monoxide and highly toxic nitrogen oxides may be produced upon the decomposition of Tertiarybutylamine in a controlled fire.

Special Protective Equipment for Fire-Fighters
Fire resistant clothing, self-contained breathing apparatus, face shield and safety goggles, safety shoes and fire resistant gloves.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Evacuate area. Use appropriate protective equipment. Purge equipment with inert gas before attempting repairs. Ensure adequate ventilation. If leak is in container call one of the emergency numbers as appropriate (See footer).

Environmental Precautions
Try to stop release, if safe to do so. For fire-fighting measures see Section 5. Prevent from entering sewers or waterways.

Clean up methods
Contact Epichem for specific advice.

7. HANDLING AND STORAGE

Handling
Valve outlet seals must remain in place unless container is secured and valve outlet piped to use point. Use a check valve or trap to prevent hazardous back flow into the container. Any equipment used for Tertiarybutylamine service must be thoroughly cleaned and prepared to eliminate contamination and must be maintained in a leak-free state. All air and moisture in the system must be eliminated before use.

Storage
Protect containers from physical damage. Do not allow temperatures to exceed (125F) 51C. Store and handle Tertiarybutylamine in a cool, well ventilated place away from heat and sources of ignition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Controls
OSHA or ACGIH: None established.
OES and MEL: None established.
Ensure adequate ventilation.

Personal Protection
Self-contained breathing apparatus, fire resistant gloves, face shield and safety goggles, safety shoes, fire-resistant garments. Safety shower and eyewash.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: (1130F) 45.2C
Vapor Pressure : Log₁₀P (mmHg) = 10.06 – 2243/T (K)
Freezing Point: (-89.5F) -67.5C
Liquid Density: 0.70 g/ml @ (68F) 20C
Molecular Weight: 73.04 grams
Solubility in water: Miscible

10. STABILITY AND REACTIVITY

Conditions to avoid
Tertiarybutylamine is highly flammable and will typically ignite if container is left open as the vapor being heavier than air will travel to ignition source and flash back.

Note: Tertiarybutylamine is stable indefinitely in an inert atmosphere at room temperature.

Materials to avoid
Oxidizing materials such as sodium hypochlorite, peroxides, chlorates, persulfates, nitrates, acids, all copper alloys and lead.

Hazardous Decomposition Products
Carbon monoxide and toxic nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

The following information summarizes human experiences and results of scientific investigations reviewed by health professionals for hazard evaluation of tertiarybutylamine. Tertiarybutylamine is considered to be highly toxic orally and moderately toxic by inhalation.

Single exposure (acute) animal studies indicate:

Oral: Highly toxic (Rat LD50=44mg/kg)
Dermal: Practically Nontoxic (Rat LD50->7940mg/kg)
Inhalation: Moderately toxic (Rat LC50=3.8mg/l)

Eye irritation: Corrosive (Rabbit, 24 hr exposure)
Skin irritation: Corrosive (Rabbit, 24 hr exposure and 3 Min.

Rats exposed by repeated inhalation (28 days) to tertiarybutylamine vapour showed decreased body weight, nasal irritation, breathing difficulties, gastrointestinal changes and mortality. A similar study with rats (13 weeks) reported nose and eye irritation, lethargy, severe inflammation of the respiratory tract, decreased body weight, blood changes, gastrointestinal changes and mortality. No adverse changes were reported in standard tests using bacterial and yeast cells.

Tertiarybutylamine is not listed in the IARC, NTP or OSHA Subpart Z as a carcinogen or potential carcinogen.

Tertiarybutylamine is listed on the TSCA inventory.

12. ECOLOGICAL INFORMATION

This product does not contain any Class I or Class II ozone depleting chemicals. The following environmental toxicity information is available:

- 96-hr LC50 Bluegill: >1000mg/l, practically nontoxic
- 96-hr LC50 Trout: 1500mg/l, practically nontoxic
- 96-hr LC50 Fathead Minnow: 100mg/l, practically nontoxic
- 96-hr LC50 Algae, Cell count: 26mg/l, slightly toxic
- 48-hr LC50 Daphnia: 94mg/l, slightly toxic

13. DISPOSAL CONSIDERATIONS

Regional and National regulations should be followed during waste disposal. Contact an Epichem representative for disposal of container and any unused quantities.

14. TRANSPORTATION INFORMATION

UN No: 3286
CLASS: 3.2, (6.1), (8)
PG II
ECCN#: EAR99
IMDG Code: 3232-1
Shipping Name: Flammable liquid, toxic, corrosive, n.o.s

15. REGULATORY INFORMATION

Classification
Highly Flammable, Toxic, Corrosive

Risk and Safety Phrases
R11: Highly flammable
R23/24/25: Toxic by inhalation, in contact with skin and if swallowed
R34: Causes burns.
S16: Keep away from sources of ignition – No smoking.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S29: Do not empty into drains.
S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

16. OTHER INFORMATION

Ensure operators understand the corrosive and flammable nature of the product. Before using this product, it is recommended that a risk assessment and safety study be carried out. Further information on the use of this product can be obtained from the Technical Product Manager at the nearest Epichem facility.

SAFETY NOTICE: In Order to provide our customers with the highest quality material and maintain our high standards of safety, the surface temperature of the bubbler will be monitored during the transportation of our products. We would like to monitor the surface temperature of the bubbler using a tempilabel. Tempilabel is a temperature-monitoring strip ranging from 120F to 150F (49C to 66C) which will indicate the temperature during shipment. The strip will turn black at one of the four ratings shown if the temperature is reached (normally a silver centre). If the temperature monitor is changed, please notify an Epichem representative immediately and we will assist you in the proper measures to be taken. We ask for your cooperation in our efforts of quality assurance and safety. If you have any questions or comments, please contact an Epichem representative. We thank you for your cooperation. Your assistance is greatly appreciated.

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Since the Company shall have no control of the use of the product described herein, the company assumes no liability for loss or damage incurred from the proper or improper use of such product.

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