IDENTIFICATION

MSDS Record Number: 5618703
Product Name(s): TRIETHYLAMINE
Product Identification: MSDS NUMBER: T5330
                        PRODUCT CODE: 9111, W635, W639, 1961
                        C.A.S. NUMBER: 121-44-8
Date of MSDS: 2006-03-16
Currency Note: This MSDS was acquired from the supplier on 2007-09-06.

MANUFACTURER/SUPPLIER INFORMATION

Company: MALLINCKRODT BAKER INC

MATERIAL SAFETY DATA

Effective Date: 03/16/06
Supercedes: 07/07/04

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

Emergency Telephone Number: 908-859-2151

NOTE: Use CHEMTREC and CANUTEC phone numbers only in the event of a chemical emergency.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

M A L L I N C R O D T  J. T. B A K E R

TRIETHYLAMINE

1. Product Identification
Synonyms: Diethylaminoethane; N,N-diethylethanamine; TEA
CAS No: 121-44-8
Molecular Weight: 101
Chemical Formula: (CH3CH2)3N
Product Codes: J.T. Baker:
                          9111, W635, W639
                    Mallinckrodt:
                                             1961
2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No</th>
<th>Percent</th>
<th>Hazardous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triethylenediamine</td>
<td>121-44-8</td>
<td>100%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3. Hazards Identification

Emergency Overview

DANGER: EXTREMELY FLAMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CORROSIVE. CAUSES BURNS TO SKIN, EYES, AND RESPIRATORY TRACT. AFFECTS THE CARDIOVASCULAR SYSTEM, LIVER, AND KIDNEYS.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

- Health Rating: 3 - Severe (Poison)
- Flammability Rating: 3 - Severe (Flammable)
- Reactivity Rating: 1 - Slight
- Contact Rating: 4 - Extreme (Corrosive)
- Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
- Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:
Corrosive. Toxic by inhalation. Vapors cause irritation to the respiratory tract; symptoms may include sneezing, coughing, nausea, difficulty in breathing, and pulmonary edema.

Ingestion:
Corrosive. Toxic! May cause burns of the mouth, throat, and stomach with severe abdominal pain and collapse. Aspiration into the lungs may occur during swallowing or vomiting, resulting in lung damage.

Skin Contact:
Corrosive. Contact can cause redness, pain, and skin burns. Can be absorbed through the skin causing systemic poisoning.

Eye Contact:
Corrosive. Liquid contact will produce severe eye injury. Vapors are irritating, causing redness, pain, blurred vision, lacrimation, conjunctivitis, and corneal edema. Corneal injury may be severe and extensive, and if not treated promptly, could result in permanent impairment of vision.

Chronic Exposure:
May cause secondary burns to skin from long exposure. Animal studies have shown target organ effects on heart, liver and kidneys.

Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders, eye problems, impaired liver, kidney, respiratory or cardiovascular function may be more susceptible to the effects of this substance.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.

Ingestion:
DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact:
Immediately flush skin with plenty of water for at least 15 minutes while
removing contaminated clothing and shoes. Call a physician, immediately.
Wash clothing before reuse.

Eye Contact:
Immediately flush eyes with gentle but large stream of water for at least
15 minutes, lifting lower and upper eyelids occasionally. Call a
physician immediately.

5. Fire Fighting Measures
Fire:
Flash point: -9°C (16°F) CC
Autoignition temperature: 249°C (480°F)
Flammable limits in air % by volume:
LEL: 1.2; UEL: 8.0
Extremely Flammable.

Explosion:
Above flash point, vapor-air mixtures are explosive within flammable
limits noted above. Vapors can flow along surfaces to distant ignition
source and flash back. Closed containers exposed to heat may explode.
Contact with strong oxidizers may cause fire. Sensitive to descargas
estáticas.

Fire Extinguishing Media:
Water spray, dry chemical, alcohol foam, or carbon dioxide. Use water to
cool fire-exposed containers, to dilute spills, to flush spills, and to
disperse vapors.

Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved
self-contained breathing apparatus with full facepiece operated in the
pressure demand or other positive pressure mode. This highly flammable
liquid must be kept from sparks, open flame, hot surfaces, and all
sources of heat and ignition. Fight fire from protected location.

6. Accidental Release Measures
Ventilate area of leak or spill. Remove all sources of ignition. Wear
appropriate personal protective equipment as specified in Section 8.
Isolate hazard area. Keep unnecessary and unprotected personnel from
together. Collect liquid in an appropriate container or absorb
with an inert material (e.g., vermiculite, dry sand, earth), and place
in a chemical waste container. Do not use combustible materials, such as
saw dust. Do not flush to sewer! Sprinkle over small spills and residues
with sodium bisulfate to neutralize. US Regulations (CERCLA) require
reporting spills and releases to soil, water and air in excess of
reportable quantities. The toll free number for the US Coast Guard
National Response Center is (800) 424-8802. If a leak or spill has not
ignited, use water spray to disperse the vapors, to protect personnel
attempting to stop leak, and to flush spills away from exposures.
J. T. Baker SOLUSORB(R) solvent adsorbent is recommended for spills of
this product.

7. Handling and Storage
Protect against physical damage. Store in a cool, dry well-ventilated
location, away from any area where the fire hazard may be acute. Outside
or detached storage is preferred. Separate from incompatibles. Containers
should be bonded and grounded for transfers to avoid static sparks.
Storage and use areas should be No Smoking areas. Use non-sparking type
tools and equipment, including explosion proof ventilation. Protect from
direct sunlight. Do not add nitrites or other nitrosating agents; a
nitrosamine, which may cause cancer, may be formed. Containers of this
material may be hazardous when empty since they retain product residues.
(vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection
Airborne Exposure Limits:
- OSHA Permissible Exposure Limit (PEL):
  25 ppm (100 mg/m3) (TWA)
- ACGIH Threshold Limit Value (TLV):
  1 ppm (TWA) skin, 3 ppm (STEL) skin
A4, Not classifiable as a human carcinogen.
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation: A Manual of Recommended Practices", most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece respirator with organic vapor cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
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.

9. Physical and Chemical Properties
Appearance: Clear, colorless liquid.
Odor: Strong ammonia-like odor.
Solubility: 5.5 g./100 g. water at 20°C.
Specific Gravity: 0.73 @ 250/40°C.
pH: No information found.
% Volatiles by volume @ 21°C (70°F): 100

10. Stability and Reactivity
Stability:
Stable under ordinary conditions of use and storage. Strongly alkaline; will undergo strong exothermic reaction with acids to form amine salts.
Hazardous Decomposition Products:
Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.
Hazardous Polymerization:
Will not occur. May catalyze polymerization of epoxides or aldehydes (especially acrolein).
Incompatibilities:
Acids, oxidizers, chlorine, hypochlorite, halogenated compounds and
nitrogen tetraoxide. N-nitrosamines, many of which are known to be potent
carcinogens, may be formed when this product comes in contact with
nitrous acid, nitrates or atmospheres with high nitrous oxide
concentrations.

Conditions to Avoid:
Heat, flame, sources of ignition, light and incompatibles. Incompatibles.

11. Toxicological Information

Oral rat LD50: 460 mg/kg; skin rabbit LD50: 570 ul/kg; inhalation mouse
LC50: 6 gm/m3; eye irritation, rabbit, standard Draize: 250 mg open,
severe; investigated as a mutagen.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Toxicity</th>
<th>Anticipated</th>
<th>IARC Category</th>
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</thead>
<tbody>
<tr>
<td>Triethyamine (121-44-8)</td>
<td>No</td>
<td>No</td>
<td>None</td>
</tr>
</tbody>
</table>

12. Ecological Information

Environmental Fate:
When released into the soil, this material may leach into groundwater.
When released into the soil, this material may evaporate to a moderate
extent. When released into water, this material may evaporate to a
moderate extent. This material has an estimated bioconcentration factor
(BCF) of less than 100. This material is not expected to significantly
bioaccumulate. 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 removed from the atmosphere by wet deposition.

Environmental Toxicity:
Microtox Data: 17 Hr EC50 Pseudomonas putida: 95 mg/L; 2 Hr EC50
Nitrosomonas: 127 mg/L
Water Flea Data: 48 Hr EC50 Daphnia magna: 200 mg/L
Freshwater Fish Species Data: 96 Hr LC50 Pimephales promelas: 44 mg/L

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as
hazardous waste and sent to 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.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: TRIETHYLAMINE
Hazard Class: 3, 8
UN/NA: UN1296 Packing Group: II
Information reported for product/size: 20L

International (Water, I.M.O.)

Proper Shipping Name: TRIETHYLAMINE
Hazard Class: 3, 8
UN/NA: UN1296 Packing Group: II
Information reported for product/size: 20L

15. Regulatory Information

-----------\Chemical Inventory Status - Part 1\-----------
16. Other Information

NPPA Ratings:
Health: 3 Flammability: 3 Reactivity: 0

Label Hazard Warning:
DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CORROSIVE. CAUSES BURNS TO SKIN, EYES, AND RESPIRATORY TRACT. AFFECTS THE CARDIOVASCULAR SYSTEM, LIVER, AND KIDNEYS.

Label Precautions:
Keep away from heat, sparks and flame. Do not get in eyes, on skin, or on clothing. Do not breathe vapor. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Label First Aid:
In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. In all cases call a physician immediately.

Product Use:
Laboratory Reagent.

Revision Information:
MSDS Section(s) changed since last revision of document include: 3, 12.

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