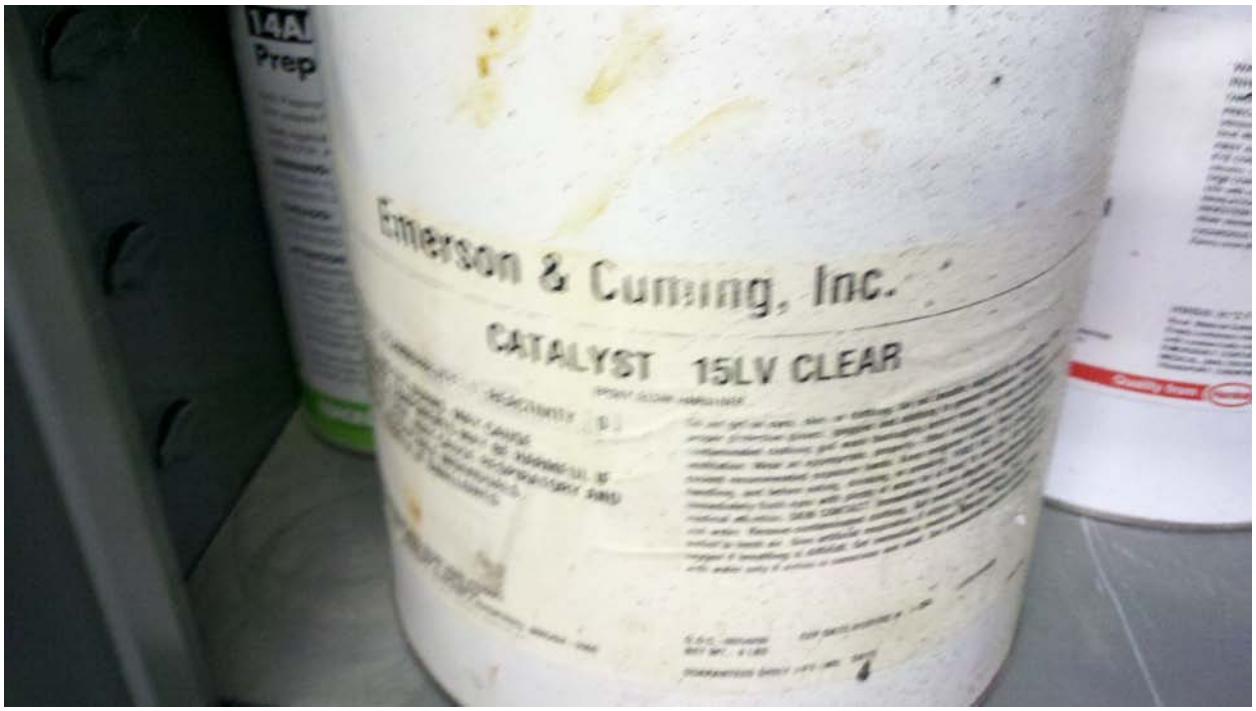

Chemical Name: Catalyst

Manufacturer: Emerson and Cuming

Container size: 1 gallon

Location: VLA

Disposal: Place empty container in trash.

Emerson & Cuming

a National Starch & Chemical Company

MATERIAL SAFETY DATA SHEET

EMERSON & CUMING
46 MANNING ROAD
BILLERICA, MASSACHUSETTS 01821

IN THE EVENT OF A CHEMICAL EMERGENCY INVOLVING A SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT, NOTIFY:
CHEMTREC USA: 800-424-9300
INTERNATIONAL: 202-483-7616 (COLLECT)

SECTION 1: IDENTIFICATION

Product Name: CATALYST 9
General Chemical Description: Aliphatic Amine blend

SECTION 2: INGREDIENTS

		Exposure Guidelines	
Components	***% by Weight***	***OSHA PEL***	***ACGIH TLV***
Tetraethylene Pentamine	90-100%	NE	NE
Triethylene Tetramine	< 5 %	NE	NE
Pentaethylene Hexamine	< 5 %	NE	NE

SECTION 3: PHYSICAL DATA

Boiling Point (°F): 604
Vapor Pressure (mm Hg @ 25°C): <0.001
Percent Volatiles by Weight: ND
Specific Gravity (water = 1): 0.99
Solubility in Water: Soluble
Vapor Density: Heavier than air
Appearance and Odor: Amber liquid, amine odor

SECTION 4: FIRE AND EXPLOSION HAZARD DATA

Flash Point (°F):
>200

Flammable Limits
Not Established

Extinguishing Media:
Use carbon dioxide, dry chemical, foam, water fog.

Unusual Fire or Explosion Hazard:

Decomposition and combustion products may be toxic. Closed containers may violently rupture under fire conditions.

Special Firefighting Procedures:
Firefighters/rescue personnel should wear positive pressure self-contained breathing apparatus and full protective equipment. Cool exposed containers with water to prevent pressure buildup. If large quantities of material are involved, evacuate area and fight fire from a safe distance.

SECTION 5: REACTIVITY DATA

Product Stability:
Product is stable under normal handling and storage conditions. Hazardous polymerization will not occur; however, review reactivity data concerning conditions to avoid and incompatible substances.

Incompatibility:
Incompatible with strong oxidizers, acids, bases. Uncontrolled mixing with epoxides may cause hazardous exothermic polymerization, possibly resulting in evolution of smoke and toxic fumes

Hazardous Decomposition Products:
Carbon monoxide, carbon dioxide, oxides of nitrogen, ammonia, amines and other organic substances may be formed during combustion. The chemical nature and quantity of decomposition by-products will vary widely depending on the conditions of combustion.

Conditions to Avoid:
Avoid storage in open containers, exposure to open flame or uncontrolled exposure to heat, uncontrolled mixing with epoxies or exposure to incompatible substances.

SECTION 6: RELEASE RESPONSE DATA

Spill response operations must be conducted in accordance with the provisions of OSHA 29 CFR 1910.120. Review the entire MSDS before proceeding with spill response.

Small Spills:
Activate available exhaust ventilation equipment in the immediate spill area. Wipe up or absorb spilled material with vermiculite or other similar material. Wash area with soapy water to remove residue. Collect absorbed material and water rinses in appropriate containers. Dispose of in accordance with current Federal, State, and local regulations.

Large Spills:
Limit access to the immediate spill area. Shut off source of the release if this can be done without risk of injury. Activate available exhaust ventilation systems in the area. Dike area to contain the spill and prevent releases to sewers, drains or other waterways. Collect spilled material for salvage/disposal. Apply absorbent material to soak up residue. Wash area with soapy water. Prevent runoff from entering waterways. Transfer absorbed material and water rinses to appropriate waste containers. Dispose of in accordance with current Federal, State and local regulations.

SECTION 7: HANDLING PRECAUTIONS

The recommendations described in this section are provided as general guidance for minimizing exposure when handling this product. Because usage conditions will vary depending on customer application, specific safe handling procedures should be developed by a person knowledgeable in the intended usage conditions and equipment. Employees must be properly trained in safe handling of this product prior to use.

Personal Protection:
This product can cause eye burns. Prevent eye contact through the use of a face shield used in conjunction with either splash-proof chemical goggles or chemical safety glasses. This product can cause skin burns and may cause allergic skin responses. Components of this product may also be absorbed through the skin. Wear appropriate protective nitrile gloves, a proper chemical resistant apron and additional impervious clothing to prevent all skin contact, contamination of clothing and possible absorption through the skin. Normal work clothing should be washed before re-use. Wash hands and face thoroughly after handling this product and before eating, drinking or smoking. Emergency eye wash facilities and safety shower must be available.

Ventilation Recommendations and Respiratory Protection:
Provide effective mechanical exhaust ventilation to draw vapors, mists, or fumes generated during processing away from the worker and to prevent routine inhalation. Ventilation must be sufficient to prevent respiratory irritation, as vapors can produce irritation and may cause allergic respiratory reactions/sensitization. Use an appropriate, properly fitted respirator if symptoms of exposure appear. The type of respiratory protection selected (SCBA, air-purifying etc.) will depend on the conditions of use. Observe OSHA regulations for respiratory protection (29 CFR 1910.134). It should be noted that engineering controls and personal protective equipment may not be sufficient to protect persons already sensitized to this material.

Storage:
Store in a cool, dry location with adequate ventilation. Keep container tightly sealed when not in use. Keep away from open flames and heat sources. Consult the product Technical Bulletin for detailed storage information.

SECTION 8: HEALTH DATA

Routes of Exposure:
Skin and eye contact, inhalation of vapors.

Medical Conditions Aggravated by Exposure:
Exposure may aggravate preexisting skin, eye and/or respiratory disorders.

Eye Contact:
Contains materials corrosive to the eyes; may cause burns and possible corneal injury. Permanent impairment of vision or blindness may occur.

Skin Contact:
Contains materials corrosive to the skin; may cause severe burns and blistering. This product may cause skin sensitization/allergic skin reactions which may be severe in certain individuals; symptoms include rash, itching, hives, swelling of the extremities. May be harmful if absorbed through the skin.

Inhalation:
Vapors may cause irritation, nausea, and headaches. May cause respiratory sensitization responses in susceptible individuals; reactions may be severe in some cases. Persons with a pre-existing sensitivity may be affected upon subsequent exposure, even at levels below the OSHA PEL or ACGIH TLV.

Symptoms may include tightness of the chest, asthma-like symptoms, respiratory distress; symptoms may be delayed.

Ingestion:
Harmful if swallowed. May cause burns to the mouth and upper gastro-intestinal tract.

Chronic Health Effects:
Repeated overexposure to polyethylene polyamines (including Diethylene Triamine, Triethylene Tetramine, and Tetraethylene Pentamine) are reported to cause liver and kidney injury in tests on laboratory animals.

SECTION 9: FIRST AID PROCEDURES

Eye Contact:
Immediately flush eyes thoroughly with water for at least 15 minutes while holding eyelids open. Get immediate medical attention.

Skin Contact:
Immediately flush the affected area of the skin with plenty of water, while removing contaminated clothing or shoes. Follow by thoroughly washing with soap and water. Avoid scrubbing, as this action could increase skin absorption and worsen the effect of chemical contact. Get immediate medical attention. Do not reuse contaminated clothing until properly cleaned. Contaminated leather articles, including shoes, cannot be decontaminated and should be destroyed.

Inhalation:
Remove victim to fresh air. Provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get immediate medical attention.

Ingestion:
DO NOT induce vomiting. If victim is conscious and alert, dilute by giving water to drink; never give anything by mouth to a drowsy, unconscious, or convulsing person. Get immediate medical attention.

SECTION 10: ADDITIONAL INFORMATION

Product NPCA Hazardous Material Identification System (HMIS) Rating:
Health: 3 Flammability: 1 Reactivity: 0

TSCA Status::
All components of this product are listed in the EPA Toxic Substance Control Act Inventory.

Foreign Inventory Status:
Canadian DSL: All components listed or exempt
European EINECS: All components listed or exempt
Japanese MITI ENCS: All components listed
Korean ECL: All components listed
Australian AICS: All components listed

SARA Status:
This product does not contain any substances regulated by the SARA Section 313 amendments to RCRA.

D.O.T./IATA Information:
Polyamines, Liquid, Corrosive, N.O.S. (Tetraethylene Pentamine, Triethylene Tetramine); 8; UN2735; PG III

Special Notes:
Volatile Organic Compound (V.0.C.) Content as tested in accordance with the Southern California Air Quality Management District Rule 109 (EPA Test Method 24):
441.5 g/l

Date Prepared:	5/22/2000	***Supersedes:***	12/31/98
Document No.:	600008	***Prepared by:***	David Haas
Revision Information:	Section 2 – Percentages changed to reflect new raw material supplier		

Abbreviations:
NA = Not Applicable
NE = Not Established
ND = Not Determined
ppm = Parts per Million
mg/m3 = Milligrams per Cubic Meter
C = Ceiling Concentration
mppcf = Million Parts per Cubic Foot
STEL = Short Term Exposure Limit
f/cc = Fibers per Cubic Centimeter

SAFETY INFORMATION: (978)436-9781 ADDITIONAL MSDS: (781)828-3300