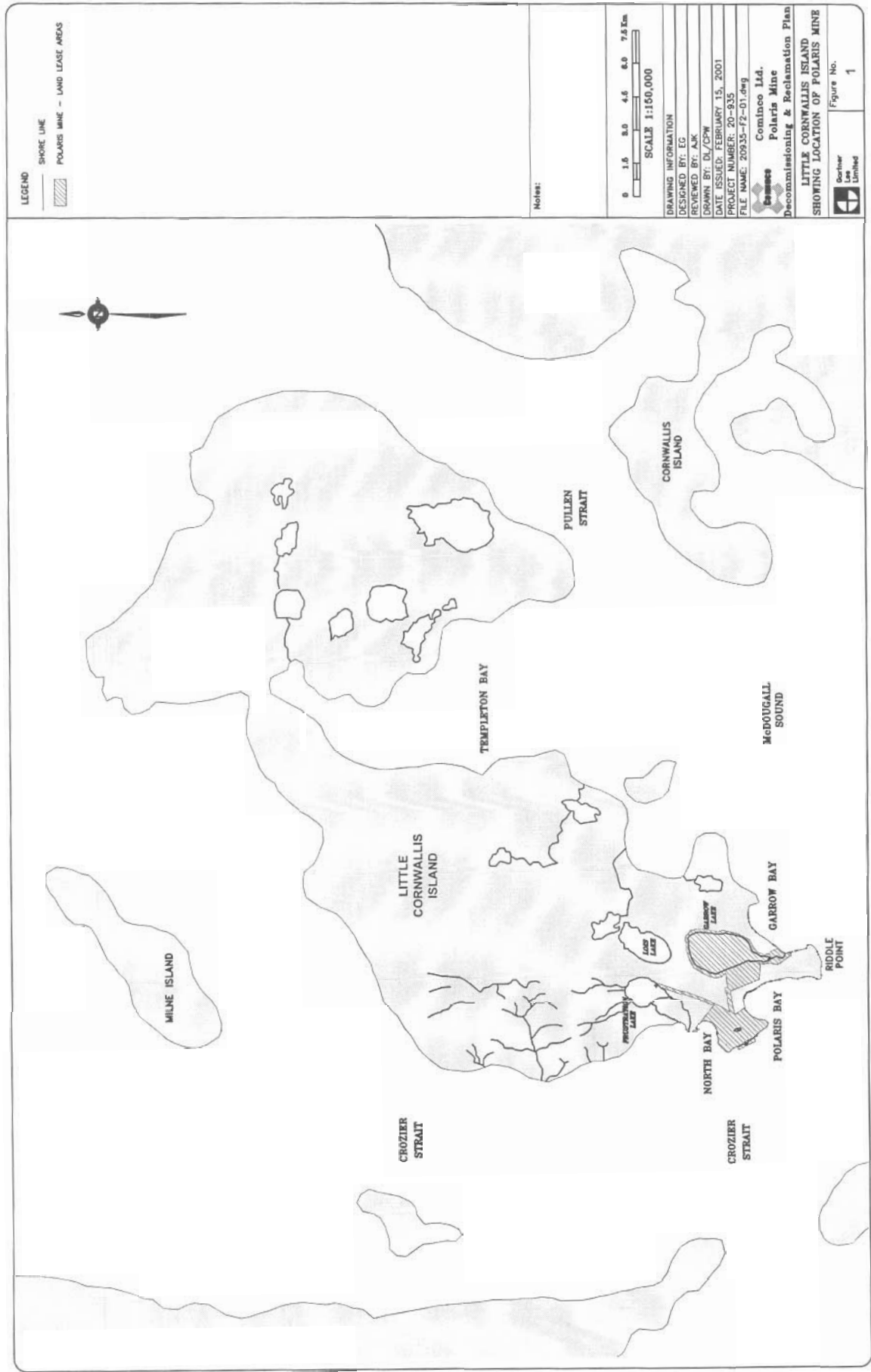
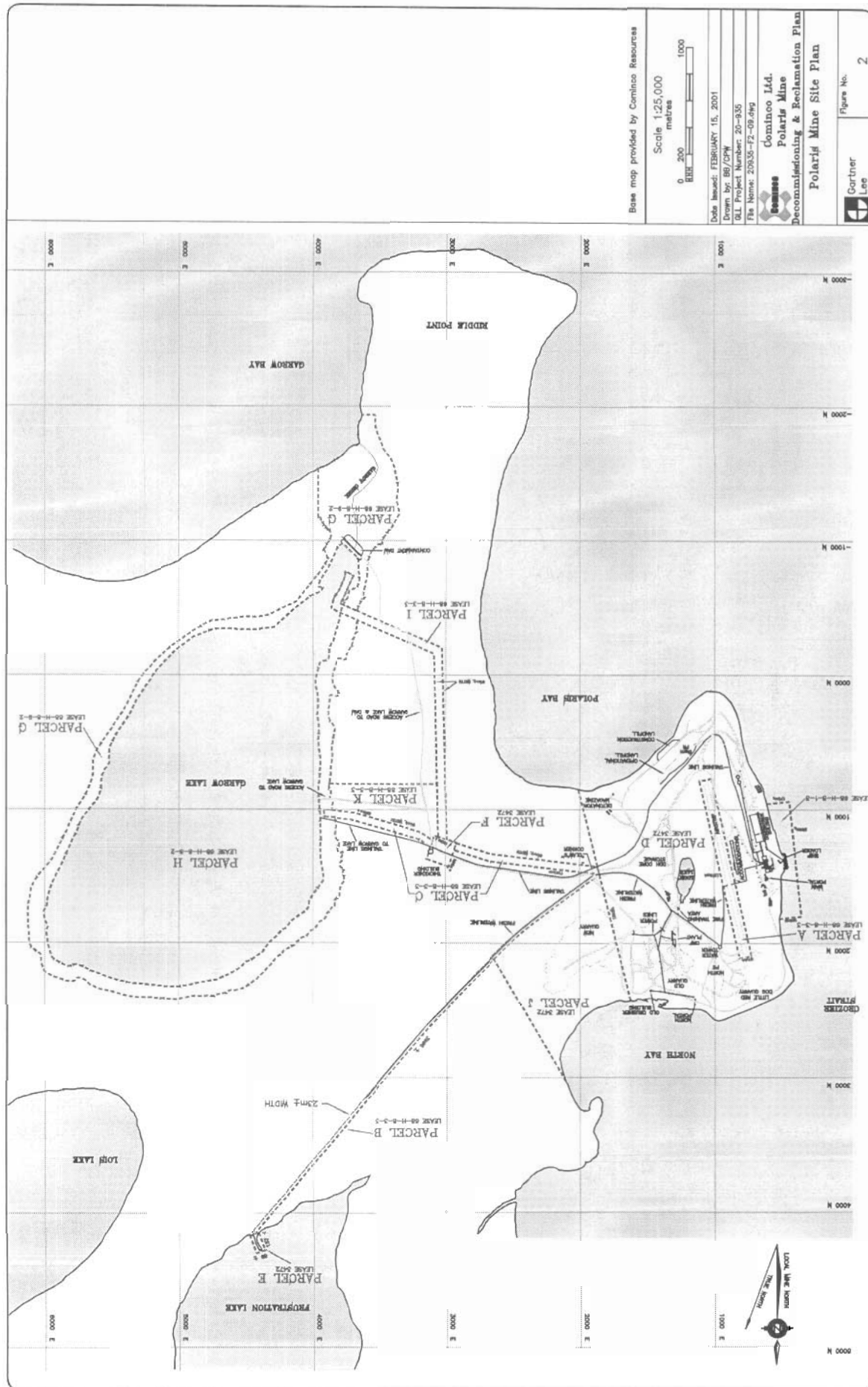


## Appendix 1

### LOCATION & SITE MAPS





## **Appendix 2**

### **MSDS Sheets**

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- Freon
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- Windshield Washer Fluid
- Xanthate – Potassium Amyl
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ACETONE

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\* M S D S \*

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\* Canadian Centre for Occupational Health and Safety \*

\* \* \* \* \* Issue : 2001-1 (February, 2001) \*

\*\*\* IDENTIFICATION \*\*\*

MSDS RECORD NUMBER : 1047579

PRODUCT NAME(S) : Acetone (CCS-972)

Acetone

2-Propanone, dimethyl ketone; DMK

PRODUCT IDENTIFICATION : CAS number: 67-64-1

#C-972

DATE OF MSDS : 1995-09-01

\*\*\* MANUFACTURER INFORMATION \*\*\*

MANUFACTURER : CELANESE CANADA INC

ADDRESS : Post Office Box 99, Station Main

Edmonton Alberta

Canada T5J 2H7

Telephone: 403-471-0425

Fax: 403-471-0398

EMERGENCY TELEPHONE NO. : 403-477-8339 (In Canada)

800-424-9300 (In USA, CHEMTREC)

\*\*\*

MESSAGE FROM CELANESE CANADA, INC: The supplier makes no warranty of any kind, express or implied, concerning the use of this product either singly or in combination with other substances. Effects can be aggravated by other materials. This product may aggravate or add to the effects of other materials. This product may be released from gas, liquid or solid materials made directly or indirectly from it. User assumes all risks incident to its use. User must communicate to its employees and customers, including consumers of its products, all warnings that relate to the potential exposure of each of those groups to the material. To the best of our knowledge, the information contained herein is accurate. However, neither Celanese Canada, Incorporated nor any of its subsidiaries or affiliates assume any liability whatsoever for the accuracy or completeness of the information contained herein.

## ACETONE

Material Safety Data Sheet  
Issued September 1, 1995

Acetone (CCS-972)  
#C-972

### Identification

Product name: Acetone (CCS-972)  
Chemical name: Acetone  
Chemical family: Ketone  
Formula:  $\text{CH}_3\text{COCH}_3$   
Molecular weight: 58  
CAS number: 67-64-1  
CAS name: Acetone  
Synonyms: 2-Propanone, dimethyl ketone; DMK.  
\*Transportation of dangerous goods  
Shipping name: Acetone  
Classification: Flammable Liquid 3.  
United Nations number: UN1090  
Packing group: II

### Physical data

Boiling point (760 mm Hg): 56.2 deg C (133 deg F)  
Freezing point: -95.4 deg C (-140 deg F)  
Specific gravity ( $\text{H}_2\text{O} = 1$  @ 20/20 deg C): 0.7910  
Vapor pressure (20 deg C): 180 mm Hg  
Vapor density (Air = 1 @ 20 deg C): 2.0  
Solubility in water (% by WT @ 20 deg C): Complete  
Percent volatiles by volume: 100  
Evaporation rate (BuAc=1): 14.5  
Appearance and odor: Clear, colorless, mobile liquid with characteristic "ketone" odor.

### Component information (See Glossary at end of MSDS for definitions)

Component, wt. % (CAS number)	Exposure levels		
	OSHA PEL TWA; STEL	ACGIH TLV(R) TWA; STEL	IDLH
- Acetone, 99.9% (67-64-1)	750 ppm; 1000 ppm	750 ppm; 1000 ppm	20,000 ppm

## ACETONE

### Fire and explosion hazard data

Flammable limits in air, % by volume

Upper: 13.0

Lower: 2.5

Flash point (test method):

Tag open cup (ASTM D1310): 0 deg F (-18 deg C)

Tag closed cup (ASTM D56): -4.0 deg F (-20 deg C)

Extinguishing media:

Use CO2 or dry chemical for small fires, alcohol-type aqueous film-forming foam or water spray for large fires. Water may be ineffective but should be used to cool fire-exposed structures and vessels.

Special fire-fighting procedures:

\*If potential for exposure to vapors or products of combustion exists, wear complete personal protective equipment, including self-contained breathing apparatus with full facepiece operated in pressure-demand or other positive-pressure mode.

Water spray can be used to reduce intensity of flames and to dilute spills to nonflammable mixture.

Unusual fire and explosion hazards:

Vapor is heavier than air and can travel considerable distance to a source of ignition and flashback.

### Special hazard designations

	NFPA	Key	
	----	---	
Health:	1	0 - Minimal	3 - Serious
Flammability:	3	1 - Slight	4 - Severe
Reactivity:	0	2 - Moderate	

### Reactivity data

Stability:

Stable

Hazardous polymerization:

Will not occur.

Conditions to avoid:

Heat, sparks and flame.

Materials to avoid:

Caustic soda and other strong alkalis; hydrochloric, sulfuric and other strong inorganic acids; amines; oxidizing agents such as hydrogen peroxide, nitric acid, perchloric acid or chromium trioxide.

Hazardous combustion or decomposition products:

Carbon monoxide.



## ACETONE

### Health data

#### Effects of exposure/toxicity data

##### Acute

Ingestion (swallowing): Can cause mental sluggishness, stupor, headache; irritation of the mouth, throat and stomach; nausea, loss of appetite, and vomiting. Practically non-toxic to animals (oral LD50, rats: 7.4 g/kg).

Inhalation (breathing): Extremely high levels produce stupor, headache, dizziness, nausea and unconsciousness. Practically non-toxic to animals (inhalation LCLo, rats, 4 hrs: 16,000 ppm).

Skin contact: Essentially non-irritating. Prolonged or repeated contact can defat the skin and produce dermatitis. Slightly toxic to animals by absorption (dermal LD50, rabbits: 20 g/kg).

Eye contact: Can cause severe injury - damage reversible.

##### Chronic

Mutagenicity: In vitro, no evidence of mutagenicity in Ames test (bacteria).

In vivo, no evidence of mutagenicity.

Carcinogenicity: No evidence of skin tumors resulting from application three times weekly over a one-year period (mice).

Reproduction: No information.

#### Medical conditions aggravated by exposure:

Significant exposure to this chemical may adversely affect people with chronic disease of the respiratory system, and/or skin.

#### Emergency and first aid procedures

Ingestion (swallowing): Induce vomiting of conscious patient immediately by giving two glasses of water and pressing finger down throat. Contact a physician immediately.

Inhalation (breathing): Remove patient from contaminated area. If breathing has stopped, give artificial respiration, then oxygen if needed. Contact a physician immediately.

Skin contact: Remove contaminated clothing and wash contaminated skin with large amounts of water. If irritation persists, contact a physician.

Eye contact: Flush eyes with water for at least 15 minutes. Contact a physician immediately.

### Spill or leak procedures

#### \*Steps to be taken if material is released or spilled:

Eliminate ignition sources. Avoid eye or skin contact; see "Special protection information" section for respirator information. Place leaking containers in well-ventilated area with spill containment. If fire potential exists, blanket spill with alcohol-type aqueous film-forming foam or use water spray to disperse vapors. Contain spill to facilitate clean-up. Clean-up methods may include absorbent materials,

## ACETONE

vacuum truck, etc. Avoid runoff into storm sewers and ditches which lead to natural waterways.

### \*Waste disposal method:

All notification, clean-up and disposal should be carried out in accordance with federal, provincial and local regulations. Preferred methods of waste disposal are incineration or biological treatment in federal/provincial approved facility.

## Special protection information

### \*Respiratory protection:

Based on contamination level and working limits of the respirator, use a respirator approved by NIOSH/MSHA (the following are the minimum recommended equipment).

For acetone concentrations of:

> or = 750 ppm and < or = 2000 ppm - Air-purifying respirator with full facepiece and organic vapor cartridge(s) or air-purifying full facepiece respirator with an organic vapor canister or a full face-piece powered air-purifying respirator fitted with organic vapor cartridge(s).  
>2000 ppm and <20,000 ppm - Positive-pressure full facepiece supplied-air respirator, or continuous-flow full face-piece supplied-air respirator.  
> or = 20,000 ppm or unknown concentration (such as in emergencies) - Positive-pressure self-contained breathing apparatus with full facepiece. Positive-pressure supplied-air respirator with full facepiece equipped with an auxiliary positive-pressure self-contained breathing apparatus escape system.

### Ventilation

Local exhaust: Recommended when appropriate to control employee exposure.

Mechanical (general): Not recommended as the sole means of controlling employee exposure.

### Protective gloves:

Neoprene or rubber.

### Eye protection:

Chemical safety goggles.

### \*Additional protective equipment:

For operations where spills or splashing can occur, use chemical protective clothing, including gloves and boots. A safety shower and eye bath should be readily available.

## Special precautions

### \*Precautions to be taken in handling and storing:

Closed containers exposed to temperatures above 49 deg C (120 deg F) in transit or storage may develop excessive vapor pressure. Always open containers slowly to allow any excess pressure to vent.

Store in a cool, well-ventilated area. Keep away from heat, sparks and flame. Keep containers closed when not in use. Use spark-resistant

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## ACETONE

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tools. Do not load into compartments adjacent to heated cargo. When transferring follow proper grounding procedures. Use with adequate ventilation. Avoid breathing vapor. Avoid contact with eyes, skin and clothing. Wash thoroughly with soap and water after handling. Decontaminate soiled clothing thoroughly before re-use. Discard contaminated leather clothing.

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### WHMIS classification

Class B, Division 2; Class D, Division 2, Subdivision B.

Prepared by: Industrial Hygiene Department

Date: September 1, 1995

\*New or revised information; previous  
version dated September 1, 1993.

### \*Glossary for Components information table

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ACGIH - American Conference of Governmental Industrial Hygienists

CAS - Chemical Abstracts Service

Ceiling - The concentration that should not be exceeded during any part of  
the working day.

IDLH - Immediately Dangerous to Life or Health

OSHA - Occupational Safety and Health Administration (USA)

PEL - Permissible exposure limit

Skin - Potential contribution to overall exposure possible  
via skin absorption

STEL - Short-term exposure level; 15-min. TWA

TLV - Threshold limit value

TWA - 8-hour time-weighted average

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ACETYLENE

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\* Canadian Centre for Occupational Health and Safety \*

\* \* \* \* \* Issue : 2001-1 (February, 2001) \*

\*\*\* IDENTIFICATION \*\*\*

MSDS RECORD NUMBER : 1079773

PRODUCT NAME(S) : Acetylene

Acetylen, Ethine, Ethyne, Narcylene

PRODUCT IDENTIFICATION : CAS NO. 74-86-2

E-4559-G

DATE OF MSDS : 1995-11-01

\*\*\* MANUFACTURER INFORMATION \*\*\*

MANUFACTURER : Praxair Products Inc

ADDRESS : 1 City Centre Drive

Suite 1200

Mississauga Ontario

Canada L5B 1M2

EMERGENCY TELEPHONE NO. : 800-363-0042

\*\*\*

Message from Praxair Products Inc: Praxair Products Inc. requests the users of this product to study this Material Safety Data Sheet (MSDS) and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify its employees, agents and contractors of the information on this MSDS and any product hazards and safety information, (2) furnish this same information to each of its customers for the product, and (3) request such customers to notify their employees and customers for the product of the same product hazards and safety information. The opinions expressed herein are those of qualified experts within Praxair Products Inc. We believe that the information contained herein is current as of the date of the Material Safety Data Sheet. Since the use of this information and these opinions and the conditions of use of the product are not within the control of Praxair Products Inc., is it the user's obligation to determine the conditions of safe use of the product.

\*\*\* SUPPLIER/DISTRIBUTOR INFORMATION \*\*\*

SUPPLIER/DISTRIBUTOR : Praxair Products Inc

ADDRESS : 1 City Centre Drive

Suite 1200

Mississauga Ontario

Canada L5B 1M2

Telephone: 905-803-1600

Fax: 905-803-1690

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**ACETYLENE**

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MATERIAL SAFETY DATA SHEET

E-4559-G

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**I. PRODUCT INFORMATION**

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PRODUCT IDENTIFIER: Acetylene  
TRADE NAME: Acetylene  
CHEMICAL IDENTITY: Acetylene  
SYNONYMS: Acetylen, Ethine, Ethyne, Narcylene  
FORMULA: C<sub>2</sub>H<sub>2</sub>  
CHEMICAL FAMILY: Alkyne  
WHMIS CLASS: A, B1, F  
PRODUCT USE: Welding and cutting  
SHIPPING NAME: Acetylene  
UN/NA #: UN 1001  
TDG CLASSIFICATION: 2.1

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**II. HAZARDOUS INGREDIENTS**

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INGREDIENTS	% (VOL)	CAS NO.
Acetylene	100	74-86-2
LD50 (SPECIES & ROUTE): Not applicable		
LC50 (Rat, 4 hrs.): Not available		
TLV (ACGIH)*: Simple asphyxiant (See Section VI)		

\* Applicable provincial TLVs may differ.

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**III. PHYSICAL DATA**

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PHYSICAL STATE: GAS (X) LIQUID ( ) SOLID ( )  
BOILING POINT, 760 mm Hg: Not applicable  
SPECIFIC GRAVITY: Not applicable  
VAPOUR DENSITY (air = 1): 0.91  
% VOLATILES (BY VOLUME): 100  
FREEZING POINT: Sublimation: -84 deg C  
VAP. PRESS AT 20 DEG C: 635 psig  
SOLUBILITY IN WATER (% BY WT): Slight  
EVAPORATION RATE (BUTYL ACETATE=1): Not applicable  
ODOUR THRESHOLD: 657 mg/m<sup>3</sup>  
pH: Not applicable  
MOLECULAR WEIGHT: 26.038  
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable  
APPEARANCE & ODOUR: Colourless gas at normal temperature and pressure;  
garlic-like odour.

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**ACETYLENE**

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**IV. FIRE OR EXPLOSION HAZARD**

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**FLAMMABLE:** IF YES, UNDER WHAT CONDITIONS? See "Unusual Fire and  
YES (X) NO ( ) Explosion Hazards" in this section.

**FLASH POINT (TEST METHOD):** **AUTOIGNITION TEMPERATURE:**  
-17.8 deg C T.C.C. 299 deg C

**FLAMMABLE LIMITS IN AIR, % BY VOLUME:** LOWER: 2.3%  
UPPER: 100%

**EXTINGUISHING MEDIA:** See paragraphs below

**SPECIAL FIRE FIGHTING PROCEDURES:**

Refer to CGA pamphlet SB-4, "Handling Acetylene Cylinders in Fire Situations".  
Evacuate all personnel from danger area. Immediately cool containers with  
water spray from maximum distance taking care not to extinguish flames.  
Remove ignition sources if without risk. If flames are accidentally  
extinguished, explosive re-ignition may occur. Use self-contained breathing  
apparatus. Stop flow of gas if without risk while continuing cooling water  
spray. Remove all containers from area of fire if without risk. Allow fire  
to burn out.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

Extremely flammable gas. Forms explosive mixtures with air and oxidizing  
agents. Container may rupture due to heat of fire. Do not extinguish flames  
due to possibility of explosive re-ignition. Flammable vapours may spread  
from leak. Explosive atmospheres may linger. Before entering area,  
especially confined areas, check atmosphere with approved explosion meter.  
No part of a container should be subjected to a temperature higher than  
52 deg C (approximately 125 deg F). All containers are provided with a  
pressure relief device designed to vent contents when they are exposed to  
elevated temperature. Contact with copper, silver, or mercury or their alloys  
or halogens can cause explosion and be ignited by pilot lights, other flames,  
smoking, sparks, heaters, electrical equipment, static discharge or other  
ignition sources at locations distant from product handling point.

**HAZARDOUS COMBUSTION PRODUCTS:** CO/CO2

**SENSITIVITY TO IMPACT:** Avoid impact against containers

**SENSITIVITY TO STATIC DISCHARGE:** Possible, See "Unusual fire and explosion  
hazards" section

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**V. REACTIVITY DATA**

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<b>STABILITY</b>		<b>CONDITIONS OF CHEMICAL UNSTABILITY:</b>
UNSTABLE	STABLE	Stable as shipped. Avoid use at pressure
[X]	[ ]	above 15 psig.

**INCOMPATIBLE PRODUCTS:** Copper, silver, mercury or their alloys, oxidizing  
agents, acids, halogens, moisture.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Thermal decomposition or burning may  
produce CO/CO2H2. The welding and cutting process may form reaction products  
such as carbon monoxide and carbon dioxide. Other decomposition products of  
normal operation originate from the volatilization, reaction or oxidation of  
the material being worked.

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**ACETYLENE**

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**HAZARDOUS POLYMERIZATION:**  
MAY OCCUR      WILL NOT OCCUR  
[X]              [ ]

**CONDITIONS OF REACTIVITY:**  
Elevated temperature and pressure and/or  
the presence of catalyst.

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**VI. TOXICOLOGICAL PROPERTIES**

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LD50 (MIXTURE):  
Not applicable

LC50 (MIXTURE):  
Not applicable

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**ROUTE OF EXPOSURE:**

SWALLOWING	SKIN ABSORPTION	INHALATION	SKIN CONTACT	EYE CONTACT
(X)	( )	(X)	(X)	(X)

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**EFFECTS OF SINGLE (ACUTE) OVEREXPOSURE:**

**SWALLOWING:** An unlikely route of exposure, but frostbite of the lips and mouth may result from contact with the liquid. If the liquid is swallowed, may cause nausea.

**SKIN ABSORPTION:** No evidence of adverse effects from available information.

**INHALATION:** Asphyxiant. Moderate concentrations of vapour may cause headache, drowsiness, dizziness, nausea, vomiting, excitation, excess salivation, and unconsciousness.

**SKIN CONTACT:** No harmful effects expected from vapour. Liquid may cause frostbite.

**EYE CONTACT:** Vapour may cause irritation. Liquid may cause irritation and frostbite.

**EFFECTS OF REPEATED (CHRONIC) OVEREXPOSURE:** NOTE: Acetylene cylinders are filled with a porous material containing acetone into which the acetylene is dissolved. ACGIH has established a TLV-TWA of 750 PPM for acetone and a STEL of 1000 PPM.

WORKING WITH WELDING AND CUTTING MAY CREATE ADDITIONAL HEALTH HAZARDS.

FUMES AND GASES can be dangerous to your health and may cause serious lung disease. Keep your head out of the fumes. Do not breathe fumes and gases caused by the process. Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. The type and amount of fumes and gases depend on the equipment and supplies used. Possibly dangerous materials may be found in fluxes, coatings, gases, metals etc. Get a Material Safety Data Sheet (MSDS) for every material used. Air samples can be used to find out what respiratory protection is needed. Short term overexposure to fumes may result in discomfort such as dizziness, nausea, or dryness or irritation of nose, throat, eyes.

**NOTES TO PHYSICIAN:**

**ACUTE:** Gases, fumes, and dusts may cause irritation to the eyes, lungs, nose, and throat. Some toxic gases associated with welding and related processes may cause pulmonary edema, asphyxiation, and death. Acute overexposure may include signs and symptoms such as watery eyes, nose and throat irritation, headache, difficulty breathing frequent coughing, or chest pains.

**CHRONIC:** Protracted inhalation of air contaminants may lead to their

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## ACETYLENE

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accumulation in the lungs, a condition which may be seen as dense areas on chest x-rays. The severity of change is proportional to the length of exposure. The changes seen are not necessarily associated with symptoms or signs of reduced lung function or disease. In addition, the changes on x-rays may be caused by non-work related factors such as smoking, etc.

OTHER EFFECTS OF OVEREXPOSURE: None

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION:

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## VII. PREVENTATIVE MEASURES

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### PERSONAL PROTECTION:

**RESPIRATORY PROTECTION:** Use respirable fume respirator or air supplied respirator when working in confined space or where local exhaust or ventilation does not keep exposure below TLV. Select in accordance with the provincial regulations or guidelines. Selection should also be based on the current CSA standards Z94.4, "Selection, care and use of respirators". Respirators should be approved by NIOSH and MSHA.

**PROTECTIVE GLOVES:** Welding gloves recommended.

**EYE PROTECTION:** Wear goggles with filter lens selected as per ANSI Z49.1. Provide protective screens and goggles, if necessary. Select in accordance with the current CSA Standard Z94.3, "Industrial eye and face protection", and any provincial regulations or guidelines.

**OTHERS:** As needed, wear hand, head, and body protection which help to prevent injury from radiation and sparks. See ANSI Z49.1. At a minimum this includes welder's gloves and protective goggles, and may include arm protectors, aprons, hats, shoulder protection, as well a substantial clothing. Train the worker not to touch live electrical parts.

### SPECIFIC ENGINEERING CONTROL:

**VENTILATION:** LOCAL EXHAUST: Use enough ventilation, local exhaust or both, to keep the fumes and gases below TLV's in the worker's breathing zone and the general area. Train the worker to keep his head out of the fumes.

MECHANICAL: ALWAYS WORK WITH ENOUGH VENTILATION

SPECIAL: Not applicable

**OTHERS:** Depends on specific use conditions and location. Use adequate ventilation or personal respiratory protection.

### STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Forms explosive mixtures with air (See Section IV). Immediately evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Remove all sources of ignition if without risk. Reduce vapours with fog or fine water spray. Shut off leak if without risk. Ventilate area of leak or move leaking container to well-ventilated area.



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## ACETYLENE

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Flammable gas may spread from leak. Before entering area, especially confined areas, check atmosphere with appropriate device.

### WASTE DISPOSAL METHOD:

Prevent waste from contaminating surrounding environment. Keep personnel away. Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with Federal, Provincial and local regulations.

### SPECIAL HANDLING AND STORAGE REQUIREMENTS:

Fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being worked, the process, procedure and electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being worked (such as paint, plating, or galvanizing), the respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapours from cleaning and degreasing activities). One recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample from inside the worker's helmet if worn or in the worker's breathing zone. Read and understand the manufacturer's instructions and the precautionary label on the product. See American National Standard Z49.1, "Safety In Welding And Cutting" published by the American Welding Society.

### MIXTURES:

When two or more gases, or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist, or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

### OTHER HANDLING AND STORAGE CONDITIONS:

Heat and sparks during use could be the source of ignition of combustible materials. Prevent fires. Refer to NFPA 51B "Cutting and Welding Processes" and NFPA 50 "Oxygen-Fuel Gas Systems." Use piping and equipment adequately designed to withstand pressures to be encountered. Gas can cause rapid suffocation due to oxygen deficiency. Store and use with adequate ventilation. Close valve when not in use and when empty. Never work on a pressurized system. Do not strike arc on cylinder. The defect produced by an arc burn could lead to cylinder rupture. Do not ground cylinder. Store in cool, dry, well ventilated area. Do not store near open flames. Electrical equipment should be explosion proof. Do not store with oxygen or other oxidizers. Protect cylinders from physical damage. Store cylinders in upright position secured to prevent falling over. Refer to CGA Pamphlets P-1 and G-1 for recommendations.

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**ACETYLENE**

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**VIII. FIRST AID MEASURES**

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**SWALLOWING:** If liquid is swallowed, do not induce vomiting. Call physician.

**SKIN CONTACT:** For exposure to liquid, flush with water and warm frostbite area with warm water (not to exceed 40 deg C). In case of massive exposure, remove clothing while showering with warm water. Call a physician.

**INHALATION:** Remove to fresh air. If breathing has stopped, give artificial respiration; if breathing is difficult, oxygen may be given; call a physician.

**EYE CONTACT:** In case of splash contamination, immediately flush eyes thoroughly with water for at least 15 minutes. Seek the advice of a physician, preferably an ophthalmologist, urgently.

**NOTE TO PHYSICIAN:** Aspirated acetone may cause severe lung damage. If a large quantity of material has been swallowed, stomach contents should be evacuated quickly in a manner which avoids aspiration. Otherwise, treatment should be directed at the control of symptoms and the clinical condition. No specific antidote is known.

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**IX. PREPARATION INFORMATION**

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DEPARTMENT	DATE	TELEPHONE
Safety and Environmental Services	Nov. 1, 1995	(905) 803-1600

Copyright (C) 1995, Praxair Products Inc.

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ALKYD FLAT PAINT

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\* M S D S \*

\* Canadian Centre for Occupational Health and Safety \*

\* \* \* \* \* Issue : 2001-1 (February, 2001) \*

\*\*\* IDENTIFICATION \*\*\*

MSDS RECORD NUMBER : 2131575

PRODUCT NAME(S) : Industrial Maintenance Sweep-Up Spray

Alkyd Flat

PRODUCT IDENTIFICATION : PLANT CODE: M51-01 White

DATE OF MSDS : 1997-03

CURRENCY NOTE : This MSDS was provided to CCOHS in

electronic form on 1999-09-29

\*\*\* MANUFACTURER INFORMATION \*\*\*

MANUFACTURER : BENJAMIN MOORE & COMPANY LIMITED

ADDRESS : 139 MULOCK AVENUE

TORONTO ONTARIO

CANADA M6N 1G9

Telephone: 416-766-1173

Fax: 416-766-9677

I. PRODUCT INFORMATION

MANUFACTURER: BENJAMIN MOORE & COMPANY LIMITED

139 MULOCK AVENUE

TORONTO, ONTARIO, M6N 1G9

TELEPHONE: (416) 766-1173 FAX: (416) 766-9677

TRADE NAME: Industrial Maintenance Sweep-Up Spray Alkyd Flat

PLANT CODE: M51-01 White

SYNONYMS: not applicable CHEMICAL NAME: not applicable

MOL. FORMULA: not applicable C.A.S. NUMBER: not applicable

GENERIC NAME: Alkyd paint

PRODUCT USE: Finish coat

TRANSPORT OF DANGEROUS GOODS:

SHIPPING NAME: Paint

CLASSIFICATION: 3.2 PIN 1263 PACKING GROUP: III

WHMIS CLASSIFICATION: B2, Flammable Liquid; D2 Other Toxic Effects

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ALKYD FLAT PAINT

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II HAZARDOUS INGREDIENTS

INGREDIENT	CAS NUMBER	%WT	TLV	LD50/LC50
V.M. & P. Naphtha (UN1268)	64742-89-8	10 - 30	300 ppm	not established
Aliphatic Hydrocarbon (UN1255)	64742-47-8	15 - 40	100 ppm	oral >8 g/kg rat
Methyl Styrene (UN2618)	25013-15-4	0.1 - 1.0	100 ppm	oral 4 g/kg rat

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III PHYSICAL DATA

The following physical data are approximate only and do not represent specification values. They should only be used in the context of this Material Safety Data Sheet.

BOILING RANGE (deg C): 113 - 199	SPECIFIC GRAVITY (20 deg C): 1.55-1.64
VAPOUR PRESSURE (kPa): >1.3 @38 deg C	VAPOUR DENSITY (air = 1): > 1
WATER SOLUBILITY: Negligible	VOLATILITY (% by vol): 50 - 55
FREEZING POINT (deg C): < -18	ODOUR THRESHOLD: not known
OIL/WATER DISTRIBUTION COEFFICIENT: Not known	pH: not applicable
EVAPORATION RATE (butyl acetate = 1): < 1	PHYSICAL STATE: Liquid
APPEARANCE & ODOUR: Thick white liquid with petroleum odour.	

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IV FIRE & EXPLOSION HAZARDS

FLASH POINT (deg C): 20.5	METHOD: TCC
FLAMMABLE LIMITS (% in air); LOWER: 0.6	UPPER: 7.0
AUTOIGNITION TEMPERATURE (deg C): Not known	
FLAMMABILITY CLASSIFICATION: Combustible Liquid	
EXTINGUISHING MEDIA: Use foam, dry chemical or water spray	
FIRE FIGHTING PROCEDURES:	

Respiratory and eye protection required by fire fighting personnel.  
Avoid spraying water directly onto the product as this will only spread the fire.

FIRE & EXPLOSION HAZARD:

Sealed containers may explode if they become overheated in a fire.  
Cool containers with a water mist or fog. Not sensitive to static discharge or mechanical impact.

HAZARDOUS COMBUSTION PRODUCTS:

Hazardous combustion products may include oxides of carbon, nitrogen

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## ALKYD FLAT PAINT

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and sulphur and smoke.

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### V. REACTIVITY

LEVEL OF STABILITY: Stable

CONDITIONS TO AVOID: None.

INCOMPATIBILITY: Avoid oxidizing agents, strong acids and strong bases.

HAZARDOUS DECOMPOSITION PRODUCTS: May produce oxides of carbon and nitrogen.

HAZARDOUS POLYMERIZATION: Will not occur.

POLYMERIZING AGENTS TO AVOID: None.

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### VI. TOXICOLOGICAL PROPERTIES

THRESHOLD LIMIT VALUE: 100 ppm (for solvent)

EFFECTS OF EXPOSURE:

High vapour concentrations are irritating to the eyes, nose, throat and lungs; may cause headaches and dizziness; anaesthetic effect may cause other central nervous system effects ultimately leading to breathing failure and death. The product will cause eye irritation but is not expected to cause tissue injury. Repeated or prolonged exposure may cause irritation of the skin and possibly dermatitis. Low toxicity through skin absorption. While oral toxicity is minimal, small amounts of this product aspirated into the lungs may cause severe health effects such as bronchopneumonia, pulmonary edema and death.

TOXICOLOGICALLY SYNERGISTIC PRODUCTS: None known.

OTHER HEALTH HAZARDS:

Possible chronic effects include kidney damage and/or disorders as observed in rats. A number of human studies have not shown clinical evidence of an association between the exposure to the solvent and disease. Methyl styrene has been reported as an experimental teratogen. None of the ingredients are listed as sensitizers, carcinogens, reproductive toxins, or mutagens.

AQUATIC TOXICITY: Not available

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### VII. EMERGENCY FIRST AID

In case of inhalation, remove victim to fresh air and administer artificial respiration if breathing has stopped. Obtain medical assistance immediately. In case of contact with eyes, flush with large amounts of water until irritation subsides. If irritation persists, obtain medical attention. For contact with skin, flush with large amounts of cold water. Use soap if available. Remove contaminated clothing after flush has begun. If ingested, do NOT

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**ALKYD FLAT PAINT**

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induce vomiting. Keep at rest and obtain medical attention immediately.

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**VIII. PREVENTIVE MEASURES**

**PERSONAL PROTECTIVE EQUIPMENT:**

Use NIOSH approved respirator specified for protection against paint spray mist and organic vapours in restricted and confined areas. Wear coverall chemical goggles to protect against splashes. Wear solvent resistant gloves to protect hands.

**STEPS TO BE TAKEN IF MATERIAL IS SPILLED OR RELEASED:**

Dike spill. Do NOT flush into sewers. Remove all sources of ignition and only use non-sparking tools. Absorb with inert material.

**WASTE DISPOSAL METHODS:**

Dispose of in accordance with local regulations.

**STORAGE AND HANDLING:**

Keep container closed when not using product. Store in a cool, well ventilated area, away from all sources of ignition.

**SPECIAL ENGINEERING CONTROLS:** None.

**SPECIAL SHIPPING INFORMATION:** Generic Supplier Label C

**SPECIAL INFORMATION:** None

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**IX. PREPARTION INFORMATION**

REGULATORY AFFAIRS DEPARTMENT  
BENJAMIN MOORE & COMPANY LIMITED

March 1997  
.CHRID 0069700037

(416) 766-1173

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AMMONIUM NITRATE

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\* \* \* \* \*

\* M S D S \*

\* Canadian Centre for Occupational Health and Safety \*

\* \* \* \* \* Issue : 2001-1 (February, 2001) \*

\*\*\* IDENTIFICATION \*\*\*

MSDS RECORD NUMBER : 2454125

PRODUCT NAME(S) : AMMONIUM NITRATE

PRODUCT IDENTIFICATION : MSDS NUMBER: A6048

PRODUCT CODE: 0729, 0731, 3436

C.A.S. NUMBER: 6484-52-2

DATE OF MSDS : 1999-11-17

CURRENCY NOTE : This MSDS was provided to CCOHS in electronic form on 2000-11-14

\*\*\* MANUFACTURER INFORMATION \*\*\*

MANUFACTURER : Mallinckrodt Baker, Inc

ADDRESS : 222 RED SCHOOL LANE

PHILLIPSBURG NEW JERSEY

U.S.A. 08865

Telephone: 800-582-2537 (Customer Service)

EMERGENCY TELEPHONE NO. : 908-859-2151

800-424-9300 (CHEMTREC, USA)

703-527-3887 (Outside USA & CANADA)

613-996-6666 (CANUTEC)

\*\*\* MATERIAL SAFETY DATA \*\*\*

Effective Date: 11/17/99

Supercedes: 12/08/96

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MSDS MATERIAL SAFETY DATA SHEET

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From: Mallinckrodt Baker, Inc.

222 Red School Lane

Phillipsburg, NJ 08865

CHEMTREC: 800-424-9300 (USA)

703-527-3887

(Outside USA & CANADA)

CANUTEC: 613-996-6666

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.

J. T. B A K E R

## AMMONIUM NITRATE

### 1. Product Identification

Synonyms: Nitric acid, ammonium salt  
CAS No: 6484-52-2  
Molecular Weight: 80.04  
Chemical Formula:  $\text{NH}_4\text{NO}_3$   
Product Codes: J.T. Baker:  
0729, 0731  
Mallinckrodt:  
3436

### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Ammonium Nitrate	6484-52-2	99 - 100%	Yes

### 3. Hazards Identification

#### Emergency Overview

DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE OR EXPLOSION. MAY BE HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

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

Health Rating: 1 - Slight  
Flammability Rating: 0 - None  
Reactivity Rating: 3 - Severe (Oxidizer)  
Contact Rating: 2 - Moderate  
Lab Protective Equip: GOGGLES; LAB COAT  
Storage Color Code: Yellow (Reactive)

#### Potential Health Effects

##### Inhalation:

May cause irritation to the respiratory tract; symptoms may include coughing, sore throat, and shortness of breath. At high temperatures, exposure to toxic nitrogen oxides decomposition products can quickly cause acute respiratory problems. Inhalation of large amounts causes systemic acidosis and abnormal hemoglobin.

##### Ingestion:

Large oral doses of nitrates may cause dizziness, abdominal pain, vomiting, bloody diarrhea, weakness, convulsions, and collapse. Harmful if swallowed. May cause methemoglobinemia resulting in cyanosis.



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## AMMONIUM NITRATE

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Skin Contact:

Causes irritation to skin. Symptoms include redness, itching, and pain.

Eye Contact:

Causes irritation, redness, and pain.

Chronic Exposure:

Small repeated oral doses of nitrates may cause weakness, depression, headache, and mental impairment.

Aggravation of Pre-existing Conditions:

No information found.

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### 4. First Aid Measures

Inhalation:

Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion:

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact:

Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.

Eye Contact:

Wash thoroughly with running water. Get medical advice if irritation develops.

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### 5. Fire Fighting Measures

Fire:

Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. May support combustion in an existing fire.

Explosion:

Contact with oxidizable substances may cause extremely violent combustion. Sealed containers may rupture when heated. Sensitive to mechanical impact.

Fire Extinguishing Media:

Use flooding amounts of water in early stages of fire involving ammonium nitrate. Use any means suitable for extinguishing surrounding fire.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved

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## AMMONIUM NITRATE

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self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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### 6. Accidental Release Measures

Remove sources of heat and ignition.  
Collected waste may be transferred to a closed, preferably metal, container and sent to a RCRA approved waste disposal facility.  
Alternatively, sweep spill into noncombustible container and dissolve in large amount of water. Add soda ash. Mix and neutralize with 6M-HCl.  
Neutralized sludge may be sent to an approved waste disposal facility.

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### 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Protect against physical damage. Store in a dry location separate from combustible, organic or other readily oxidizable materials. Avoid storage on wood floors. Remove and dispose of any spilled dichromates; do not return to original containers. Do not store above 54C (130F) preferably below 30C (86F). Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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### 8. Exposure Controls/Personal Protection

Airborne Exposure Limits:  
None established.

Ventilation System:  
A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. 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):  
For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:  
Wear protective gloves and clean body-covering clothing.

Eye Protection:  
Use chemical safety goggles. Maintain eye wash fountain and quick-drench

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## AMMONIUM NITRATE

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facilities in work area.

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### 9. Physical and Chemical Properties

Appearance:	Boiling Point:
Colorless crystals.	210C (410F) Decomposes.
Odor:	Melting Point:
Odorless.	170C (338F)
Solubility:	Vapor Density (Air=1):
118g/100g water @ 0C (32F).	No information found.
Specific Gravity:	Vapor Pressure (mm Hg):
1.73 @ 23C (77F)	No information found.
pH:	Evaporation Rate (BuAc=1):
5.4	No information found.
% Volatiles by volume @ 21C (70F): 0	

=====

### 10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage. Hygroscopic.

Hazardous Decomposition Products:

Emits nitrous oxides when heated to decomposition. Liberates ammonia in reaction with strong alkalis.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Aluminum, antimony, chromium, copper, iron, lead, magnesium, manganese, nickel, zinc, brass, oil, charcoal, organic material, acetic acid, ammonium chloride, bismuth, cadmium, chlorides, cobalt, phosphorus, potassium and ammonium sulfate, sodium, sodium hypochlorite, sodium perchlorate, sodium-potassium alloy, and sulfure.

Conditions to Avoid:

Heat, flame, ignition sources, dusting and incompatibles. Moisture and combustible materials. Shock sensitive.

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AMMONIUM NITRATE

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11. Toxicological Information

Oral rat LD50: 2217 mg/kg.

-----\Cancer Lists\-----

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Ammonium Nitrate (6484-52-2)	No	No	None

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12. Ecological Information

Environmental Fate:

When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is not expected to evaporate significantly. When released into water, this material is expected to readily biodegrade.

Environmental Toxicity:

No information found.

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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.)

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Proper Shipping Name: AMMONIUM NITRATE

Hazard Class: 5.1

UN/NA: UN1942

Packing Group: III

Information reported for product/size: 300LB

International (Water, I.M.O.)

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Proper Shipping Name: AMMONIUM NITRATE

Hazard Class: 5.1

UN/NA: UN1942

Packing Group: III

Information reported for product/size: 300LB

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# AMMONIUM NITRATE

## 15. Regulatory Information

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-----\Chemical Inventory Status - Part 1\-----
Ingredient                                     TSCA   EC    Japan  Australia
-----
Ammonium Nitrate (6484-52-2)                 Yes   Yes   Yes    Yes

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-----\Chemical Inventory Status - Part 2\-----
Ingredient                                     Korea  DSL   NDSL   Phil.
-----
Ammonium Nitrate (6484-52-2)                 Yes   Yes   No     Yes

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-----\Federal, State & International Regulations - Part 1\-----
Ingredient                                     -SARA 302-   -SARA 313-
                                     RQ    TPQ      List  Chemical Catg.
-----
Ammonium Nitrate (6484-52-2)                 No    No       No    Nitrate cmpd

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-----\Federal, State & International Regulations - Part 2\-----
Ingredient                                     CERCLA      -RCRA-      -TSCA-
                                     261.33      8(d)
-----
Ammonium Nitrate (6484-52-2)                 No          No          No

```

Chemical Weapons Convention: No      TSCA 12(b): No      CDTA: No  
SARA 311/312: Acute: Yes   Chronic: No      Fire: No      Pressure: No  
Reactivity: Yes      (Pure / Solid)

Australian Hazchem Code: 1[S]

Australian Poison Schedule: No information found.

WHMIS:      This MSDS has been prepared according to the hazard  
criteria of the Controlled Products Regulations (CPR) and  
the MSDS contains all of the information required by the  
CPR.

## 16. Other Information

NFPA Ratings:

Health: 2    Flammability: 0    Reactivity: 3    Other: Oxidizer

Label Hazard Warning:

DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE OR  
EXPLOSION. MAY BE HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO  
SKIN, EYES AND RESPIRATORY TRACT.

Label Precautions:

Keep from contact with clothing and other combustible materials.  
Do not store near combustible materials.  
Store in a tightly closed container.  
Avoid breathing dust.  
Avoid contact with eyes, skin and clothing.  
Remove and wash contaminated clothing promptly.  
Use only with adequate ventilation.

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**AMMONIUM NITRATE**

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Wash thoroughly after handling.  
Store preferably below 30C

**Label First Aid:**

If inhaled, remove to fresh air. Get medical attention for any breathing difficulty. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. In all cases, get medical attention.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

No changes.

**Disclaimer:**

\*\*\*\*\*  
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