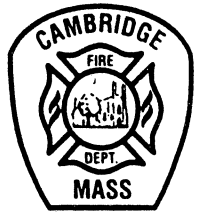


CITY OF CAMBRIDGE

FIRE DEPARTMENT

HEADQUARTERS

491 BROADWAY, CAMBRIDGE, MA 02138



KEVIN J. FITZGERALD
CHIEF OF DEPARTMENT

(617) 349-4921
FAX (617) 349-4912

WALTER J. ELLIS
ASSISTANT CHIEF

October 30, 1995

Robert W. Healy, Manager
City Manager's Office

Dear Mr. Healy:

Re: Council Order No. 10, dated October 2, 1995

This department responded to a hazardous material incident at Haviland Candies at 134 Cambridge Street on September 23, 1995. The response was requested by an employee who had detected an odor of ammonia in a stairwell. Fire Department personnel shut the refrigerator system down and performed positive pressure ventilation until tests confirmed that the building was safe.

The plant was then returned to the control of the Haviland Maintenance crew to repair the system. This was the first response to this property by the Cambridge Fire Department since 1989 for a chemical emergency.

Necco reopened this plant several months ago. Since Necco acquired the property, an expensive rehab was performed on the ammonia system. Inspectional Services also inspected this property after this incident.

Respectfully,

Kevin J. Fitzgerald, Chief

RECEIVED
95 OCT 31 AM 9:59
OFFICE OF THE CITY MANAGER



CITY OF CAMBRIDGE

1493 CAMBRIDGE STREET
CAMBRIDGE, MASSACHUSETTS 02139 • TEL. 498-1590

RECEIVED
95 OCT 31 AM 8:29
OFFICE OF THE CITY MANAGER

EMERGENCY MANAGEMENT DEPARTMENT

David B. O'Connor
Director

October 30, 1995

Mr. Robert W. Healy
City Manager
Cambridge City Hall
795 Massachusetts Avenue
Cambridge, MA

Re: Council Order No. 10 of October 2nd, 1995
Ammonia spills at "Deran" Candy Factory

Dear Mr. Healy:

In response to your request for information for the Cambridge City Council, I have reviewed the records of this office. The following contains information relative to all ammonia spills at this site which is available in this office. I will first discuss the most recent incident and then describe previous incidents. I should note that the facility was previously known as Deran Confectionary, then as Deran division of Borden Inc. and then as Great American Brands Inc. . It is currently known as the Haviland Division of NECCO Inc.

September 23, 1995 Spill

Product Released: approximately 1500-2000 lbs
Injuries: none

The spill occurred at 2:28PM. It appears that the leak was due to the rupture of a flange gasket in the basement. The condition was rectified by the Cambridge Fire Department Hazmat team by shutting down the system, closing a king valve at the roof level and ventilating the building with positive pressure. The Cambridge Fire Department ordered a Level 1 Working hazmat response

for this incident. A three story wood frame building directly across from the building was evacuated. It should be noted that the highest concentration of ammonia measured within the facility was approximately 250 parts per million (ppm). This is half the 500ppm level established by the National Institute for Occupational Safety and Health (NIOSH) as immediately dangerous to life or health (IDLH).

1976 Spill

Product released: quantity unknown
Injuries: several Cambridge firefighters

This spill occurred before my appointment as Emergency Management Director. I have reviewed the records and annual reports for 1976 and no reference is made to the incident in those records. I recall that the incident caused injuries to a number of Cambridge Firefighters. I seem to recall that the incident was caused by a fork lift truck hitting a refrigerant pipe.

June 15, 1987 Spill

Product released: approximately 400 lbs
Injuries: none

This spill occurred when a safety release valve opened due to equipment failure. All ammonia was released from the safety valve at the roof (6th floor) level. This minimized exposure to those outside the plant

July 15, 1987 Spill

Product released: approximately 450 lbs
Injuries: none

This spill occurred when a water chiller was purged through a relief valve in order to replace chiller tubes. All ammonia was released from the relief valve at the 6th floor level.

July 7, 1988 Spill

Product released: approximately 150 lbs

Injuries: none

This spill occurred when accumulator lines were purged in preparation for installation of a pump on a compressor in the basement.

July 9, 1988 Spill

Product released: approximately 150 lbs

Injuries: none

This spill occurred when a water chiller on the third floor of the plant was purged in order to perform repairs on the chiller

February 13, 1989 Spill

Product released: approximately 150 lbs

Injuries: none

This spill occurred when a portion of the refrigeration system was purged to allow the replacement of two old pumps in the basement with two new pumps. All product released was released in the basement.

May 15, 1990 Spill

Product released: approximately 100 lbs

Injuries: none

This spill occurred when an evaporator located on the first floor level was purged in order to disconnect the evaporator. All product released was released on the first floor level.

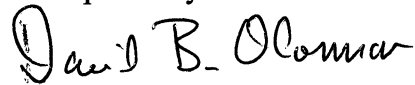
It should be noted that the refrigeration system at this facility has been significantly upgraded since the 1987-1990 period when many of these spills occurred. I understand that when NECCO Inc. took over the facility they had

solenoid operated check valves installed in the system to minimize the possibility of larger spills.

It also should be noted that the restrictions contained in the Montreal Protocols on the use and manufacturing of CFC based refrigerants has had the effect of forcing users of large refrigeration systems to shift to anhydrous ammonia as the refrigerant of choice. Because of this change, we can expect to see an increase in the use of ammonia as a refrigerant. This could result in an increase of such incidents

For your reference, I am attaching a photocopy of a material safety data sheet for anhydrous ammonia provided by the firm that supplies ammonia to the facility.

Respectfully submitted

A handwritten signature in black ink that reads "David B. O'Connor". The signature is written in a cursive style with a large, looped 'D' and a distinct 'O'.

David B. O'Connor

MATERIAL SAFETY DATA SHEET

ANHYDROUS AMMONIA



DISTRIBUTORS:
NATIONAL AMMONIA COMPANY
BOWER AMMONIA & CHEMICAL COMPANY
NORTHEASTERN AMMONIA COMPANY, INC.
AL WELLS, INC.

TACONY & VANKIRK STS. PHILADELPHIA PA 19135
CORPORATE EMERGENCY TELEPHONE NUMBER:
215-535-7530
CHEMTREC (CMA)
800-424-9300

DESCRIPTION

CHEMICAL NAME: Ammonia, anhydrous
SYNONYMS: Ammonia, liquefied
CHEMICAL FAMILY: Ammonia
COMPOSITION: 99+% ammonia

CAS REGISTRY NO.: 7664-41-7

FORMULA: NH_3

MOL. WT.: 17.03

STATEMENT OF HEALTH HAZARD

HAZARD DESCRIPTION: Strong irritant for eye, upper and lower respiratory tract; may cause lung or permanent eye injuries. Corrosive in contact with skin, a primary skin irritant and sensitizer.
Not listed in the National Toxicology Program annual report.
Not listed as a carcinogen by the International Agency for Research on Cancer.
EXPOSURE LIMITS: 50 ppm, 35 mg/m³ (8 hr. TWA) (OSHA: 29 CFR 1910.1000).

EMERGENCY TREATMENT

EFFECTS OF OVEREXPOSURE: Eye: lachrymation, edema, blindness. Moist skin: irritation, corrosive burns, blister formation. Contact of liquid with skin freezes the tissue, then produces a caustic burn. Inhalation: heavy, acute exposure may result in severe irritation of the respiratory tract, glottal edema, bronchospasm, pulmonary edema, respiratory arrest. Chronic effects: bronchitis. Extreme exposure (5000 ppm) can cause immediate death from spasm, inflammation or edema of larynx.

EMERGENCY AID: Eye: Flush with copious amount of water for 15 min. Eyelids should be held open and away from eyeball to ensure thorough rinsing. SPEED AND THOROUGHNESS IN RINSING THE EYE IS MOST IMPORTANT IN PREVENTING LATENT PERMANENT INJURIES. Inhalation: move to fresh air. Administer oxygen or artificial respiration if necessary. Skin: flush affected area with copious amount of water for 15 min. Remove contaminated clothing while flushing. Do not rub affected area. Do not apply ointments to skin burns. IF SYMPTOMS PERSIST OR EXPOSURE IS SEVERE, SEEK PROMPT MEDICAL HELP.

NOTE TO PHYSICIAN: Eye injury may appear as delayed phenomenon. Pulmonary edema may follow chemical bronchitis. Supportive treatment with necessary ventilatory actions, including oxygen, may warrant consideration.

PHYSICAL DATA

BOILING PT.: -33°C (-28°F)
VAPOR PRESSURE: @ 25.7°C: 10 atm
SPECIFIC GRAVITY: 0.618

FREEZING PT.: -78°C (-108°F)

VAPOR DENSITY (Air=1): 0.6

SOLUBILITY IN WATER: 0°C: 89.9g/100cc;
100°C: 7.4g/100cc

PERCENT VOLATILE: 100%

EVAPORATION RATE (Water=1): faster than water if in liquid form

APPEARANCE AND ODOR: Colorless gas, pungent odor.

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: None

AUTOIGNITION TEMP.: 651°C (1204°F) catalyzed by iron;
850°C (1562°F) uncatalyzed

FLAMMABLE RANGE IN AIR: 16% to 25% by Volume

EXTINGUISHING MEDIA: Water spray or fog

SPECIAL FIRE-FIGHTING PROCEDURES: Must wear protective clothing and respiratory protection. See PROTECTIVE EQUIPMENT. Stop source if possible. Cool fire-exposed containers with water spray. Stay upwind and use water spray to knock down vapor and dilute. Let fire burn.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Not generally a fire hazard. If relief valves are inoperative, heat-exposed storage containers may become explosion hazards. Contact of ammonia with chemicals such as mercury, chlorine, iodine, bromine, silver oxide, or hypochlorites can form explosive compounds. Special hazard with chlorine to form chloramine gas, also a primary skin irritant and sensitizer. Combustion may form toxic nitrogen oxides.

MATERIAL SAFETY DATA SHEET

ANHYDROUS AMMONIA (Continued)

CHEMICAL REACTIVITY

STABILITY: Stable at room temperature. Exothermic reaction with acids.

CONDITIONS TO AVOID: Avoid mixing with chlorine bleach, sulfuric or other strong mineral acids; contact with galvanized steel, copper, brass, bronze, gold, mercury, silver, strong oxidizers, hypochlorites and halogens.
See EXPLOSION HAZARDS.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen and nitrogen gases above 450°C.

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN: Wear respiratory protection and protective clothing; see PROTECTIVE EQUIPMENT. Shut off source if possible. Stay upwind from spills or leaks. Contain spill by diking and use water spray to absorb ammonia gas and dilute. Caution: Adding water to large spills may increase volatilization of ammonia, thus may increase possibility for exposure.

WASTE DISPOSAL: Listed as hazardous substance under CWA (40 CFR 116.4, 40 CFR 117.3 Reportable Quantity, 100#/45.4kg.). Classed as a hazardous waste under RCRA (40 CFR 261.32 Corrosive, No. D002). Comply with all regulations. Spill will evaporate. Contaminated water may be used on agricultural land as fertilizer. Keep spill from entering streams or lakes.

SPECIAL PROTECTION AND PROCEDURES

RESPIRATORY PROTECTION: MSHA/NIOSH approved air-purifying type with full facepiece for work purposes; self-contained breathing apparatus for entry and escape in emergencies. Refer to 29 CFR 1910.134 and ANSI Z88.2-1969 for requirements and selection.

VENTILATION: Engineering control to 50 ppm or less. Respiratory protection for higher vapor concentration. Refer to 29 CFR 1910.134 and ANSI Z9.2-1960 for requirements and selection.

PROTECTIVE EQUIPMENT: Gas-tight chemical goggles, respiratory protection, impervious outer clothing, gloves, overshoes as needed. Cotton work clothes recommended. Refer to 29 CFR 1910.132 to 1910.136 for requirements.

SPECIAL PRECAUTIONS

HANDLING AND STORING: Store in cool, well-ventilated area with containers tightly closed. OSHA 29 CFR 1910.111 prescribes handling and storage requirements for anhydrous ammonia as a hazardous material.

WORKPLACE: PROTECTIVE EQUIPMENT as discussed above should be near, but outside of ammonia area. Eyewash and safety shower in immediate vicinity. See 29 CFR 1910.141 for workplace requirements.

DISPOSAL: Anhydrous ammonia is listed under RCRA and FWPCA. See WASTE DISPOSAL. Suitably diluted, ammonia may be disposed of on agricultural land as a fertilizer.

PERSONAL: Check availability of emergency equipment. Follow proper procedures. Wear needed protective equipment. Do not wear contact lenses without gas-tight chemical goggles.

LABELING AND SHIPPING

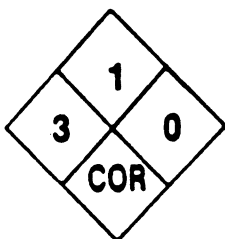
HAZARD CLASS: Nonflammable gas

PROPER SHIPPING NAME: Anhydrous Ammonia—Nonflammable Gas UN 1005 (RQ)

PLACARD: Nonflammable Gas

Label: Nonflammable Gas UN 1005
IDENTIFICATION NO.: UN 1005

National Fire
Protection Assoc.
Hazard Rating:



Hazardous Materials
Identification System
Label:

ANHYDROUS AMMONIA	
HEALTH	3
FLAMMABILITY	1
REACTIVITY	0
PERSONAL PROTECTION	H

OTHER REGULATORY REQUIREMENTS

Under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 any accidental environmental release of this chemical equal to or over the reportable quantity of 100 lbs. must be reported promptly to the National Response Center, Washington, D.C. (1-800-424-8802). Any consumer product containing 5% or more ammonia requires a POISON label under FHS (16 CFR 1500.129(1)).

The information, data, and recommendations in this material safety data sheet relate only to the specific material designated herein and do not relate to use in combination with any other material or in any process. The information, data, and recommendations set forth herein are believed by us to be accurate. We make no warranties, either expressed or implied, with respect thereto and assume no liability in connection with any use of such information, data, and recommendations.



EXECUTIVE DEPARTMENT
ROBERT W. HEALY
City Manager

RICHARD C. ROSSI
Deputy City Manager

CITY OF CAMBRIDGE
CAMBRIDGE, MASSACHUSETTS 02139

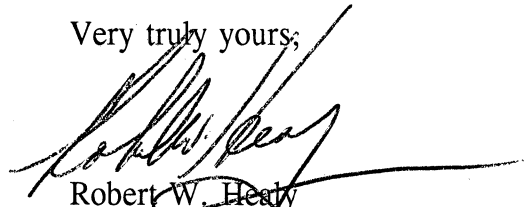
TEL. 349-4300
FAX. 349-4307

November 6, 1995

To The Honorable, The City Council:

With reference to Awaiting Report Item No. 46, regarding a report on the various spills that have occurred at Deran Confectionery, please find attached responses from Fire Chief Kevin Fitzgerald and Emergency Management Director David O'Connor.

Very truly yours,



Robert W. Healy
City Manager

RWH/mec
attachments

Consent Agenda #8

350

Relative to Awaiting Report
Item Number Forty-six regarding
a report on the various spills
that have occurred at Deran Confectionery.

*for original order
see 1995 City Manager
Requests # 421.*

In City Council November 6, 1995

Placed on file