

Rutzen Exhibit 18
Date 11/15/85
RICHARD G. STIREWALT
REGISTERED PROF. REPORTER

SAFETY DEPT

E-2
No 706

UNION CARBIDE INDIA LIMITED
INDIA MIC-BASED PESTICIDE PROJECT
BHOPAL (M. P.), INDIA.

PHOSGENE UNIT
AND
METHYL ISOCYANATE UNIT
SAFETY CONSIDERATIONS REPORT.

W. O. 930-4533
930-4534

DECEMBER 16, 1974

ENGINEERING DEPARTMENT
CHEMICALS AND PLASTICS
UNION CARBIDE CORPORATION
SOUTH CHARLESTON, WEST VIRGINIA

10115579

UCC 21450

BSR

INDIA MIC-BASED PESTICIDE PLANT

Engineering Order
Work Orders (UCIL)

938-6795
930-4533, - 4534

PHOSGENE UNIT
AND
METHYL ISOCYANATE UNIT
SAFETY CONSIDERATIONS REPORT

DECEMBER 16, 1974

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10115880

UCC 21451

11. TABLE OF CHEMICALS (Continued)

- NOTES: (a) Air sampling and analysis for this chemical is recommended.
(b) Established by American Conference of Governmental Industrial Hygienists (ACGIH), 1973.
(c) Promulgated by Occupational Safety and Health Act (OSHA) in the United States as limit allowed by law.
(d) Repeated contact is more hazardous.
(e) Sensitization may result.
(f) Irritates the nose, eyes, and throat.

Health Hazard Rating Symbols

- 1 No residual injury is to be expected from accidental exposure even if no treatment is applied.
- 2 Minor residual injury may result from some accidental exposures if no treatment is applied.
- 3 Minor residual injury may result in spite of prompt treatment.
- 4 Major residual injury may result in spite of prompt treatment.
- 5 Major residual injury is likely in spite of prompt treatment.

10-115895

UCC 21469

METHYL ISOCYANATE

Methyl isocyanate is a hazardous material by all means of contact. Its odor or tearing effects cannot be used to alert personnel to an unsafe concentration of vapor. The Threshold Limit Value (TLV) is 0.02 ppm by volume in air for average 8-hour exposures, but no odor or tearing is perceived by humans even at concentrations as high as 0.4 ppm. Mild irritation to the nose, throat, and eyes (with no odor) is noticeable at 2.0 ppm; this irritation becomes more intense at a concentration level of 4.0 ppm. Methyl isocyanate is a poison to humans by inhalation as defined by ICC regulations and should be regarded as a poison by swallowing or skin contact.

Methyl isocyanate is assigned a health hazard rating of 4 in the OCS hazard signal system. WARNING: Use stringent precautions to eliminate any possibility of human contact with methyl isocyanate.

Eye Hazards - Methyl isocyanate liquid will seriously injure the eyes even when it is diluted with a non-toxic liquid to a 1 per cent concentration. Avoid eye contact with vapors or liquid by wearing vapor-proof goggles or full-face mask. Eyes exposed to methyl isocyanate liquid or concentrated vapor should be treated by copious irrigation with water for 15 minutes. Then obtain medical attention.

Breathing - Methyl isocyanate is a recognized poison by inhalation and is intensely irritating to breathe. It causes severe bronchospasm and asthma-like breathing. Major residual injury is likely in spite of prompt treatment. Avoid breathing vapors of methyl isocyanate.

Air-supplied, full-face masks should be used when necessary to work in vapors of methyl isocyanate. If accidental exposure occurs, remove the patient to fresh air, give artificial respiration if needed, and take the patient to the medical department immediately.

Skin Contact - Liquid methyl isocyanate can cause skin burns and absorption through the skin can be harmful. Minor to major residual injury may result by contact with the skin in spite of prompt treatment. In case of skin contact, flush contaminated area thoroughly with water for 15 minutes after removing contaminated clothing. Remove the patient to the medical department as soon as practical.

Swallowing - Methyl isocyanate is a serious poison if swallowed. Major residual injury may result in spite of prompt treatment. DO NOT SWALLOW METHYL ISOCYANATE. In case of accidental swallowing of methyl isocyanate, get medical attention at once.

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