

AR201-13405B

# I U C L I D

## Data Set

**New Chemical** : ID: 79-04-9  
**CAS No.** : 79-04-9  
**Generic name** : Chloroacetyl chloride

**Producer Related Part**  
**Company** : The Dow Chemical Company  
**Creation date** : 28.11.2000

**Substance Related Part**  
**Company** : The Dow Chemical Company  
**Creation date** : 28.11.2000

**Memo** :

**Printing date** : 05.12.2001  
**Revision date** :  
**Date of last Update** : 05.12.2001

RECEIVED  
OPPT NSIC  
2001 DEC 21 PM 2:20

# 1. General Information

**Id** 79-04-9  
**Date** 05.12.2001

## 1.0.1 OECD AND COMPANY INFORMATION

**Type** :  
**Name** : The Dow Chemical Company  
**Partner** :  
**Date** :  
**Street** : 2020 Dow Center  
**Town** : 48674 Midland, Michigan  
**Country** : United States  
**Phone** :  
**Telefax** :  
**Telex** :  
**Cedex** :  
13.12.2000

## 1.0.2 LOCATION OF PRODUCTION SITE

**Name of Plant** : The Dow Chemical Company's Michigan Operations Site  
**Street** :  
**Town** : Midland MI  
**Country** : United States  
**Phone** : 989-636-1000  
**Telefax** :  
**Telex** :  
**Cedex** :  
**Remark** : Chloroacetyl Chloride (CAC) is produced in a single facility within The Dow Chemical Company's Michigan Operations Site located in Midland, Michigan. CAC is manufactured from vinylidene chloride in a closed system. The majority of the CAC is consumed within the same facility in the production of other chlorinated derivatives. A very small percentage is sold to off-site customers, who also utilizes CAC as an intermediate. Upon completion of production, the CAC is placed in one of several storage tanks, which are all vented to a caustic scrubber. For internal consumption, CAC is transferred to the reactors as needed via pipeline. For off-site consumption, the CAC is loaded, via a closed system with a vapor return line, into isocontainers. The customers, who off-load the CAC, also have vapor recovery systems in place. Further, off-site customers have handled this material safely for quite some time as evidenced by our on-site customer audits. These audits, conducted by our product steward, are required by our Global Product Stewardship Plan to be held at least every three years.  
  
30.08.2001

## 1.0.3 IDENTITY OF RECIPIENTS

### 1.1 GENERAL SUBSTANCE INFORMATION

**Substance type** : organic  
**Physical status** : liquid  
**Purity** : % w/w  
14.12.2000

#### 1.1.0 DETAILS ON TEMPLATE

## 1.7 USE PATTERN

### 1.7.1 TECHNOLOGY PRODUCTION/USE

## 1.8 OCCUPATIONAL EXPOSURE LIMIT VALUES

**Type of limit** : TLV (US)  
**Limit value** : .05 other: ppm  
**Short term exposure**  
**Limit value** : .15 other: ppm  
**Schedule** :  
**Frequency** : times  
**Remark** : This value carries a skin notation. A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

**Reliability** : (1) valid without restriction  
30.08.2001

**Type of limit** : other: DOW IHG  
**Limit value** : .01 other: ppm  
**Short term exposure**  
**Limit value** : .05 other: ppm  
**Schedule** :  
**Frequency** : times  
**Remark** : This value carries a skin notation. A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

**Reliability** : (1) valid without restriction  
30.08.2001

## 2. Physico-Chemical Data

Id 79-04-9  
Date 05.12.2001

### 2.1 MELTING POINT

Value : = -21.8 °C  
Sublimation :  
Method :  
Year :  
GLP : no data  
Test substance : as prescribed by 1.1 - 1.4  
Remark : Data are for the flake form of the material.  
Source : The Dow Chemical Company  
14.12.2000 (1)

### 2.2 BOILING POINT

Value : = 106 °C at  
Decomposition :  
Method :  
Year :  
GLP : no data  
Test substance : as prescribed by 1.1 - 1.4  
Source : The Dow Chemical Company  
14.12.2000 (1)

### 2.3 DENSITY

#### 2.3.1 GRANULOMETRY

### 2.4 VAPOUR PRESSURE

Value : = 33.3 hPa at 25° C  
Decomposition :  
Method :  
Year :  
GLP : no data  
Test substance : as prescribed by 1.1 - 1.4  
Source : The Dow Chemical Company  
14.12.2000 (1)

### 2.5 PARTITION COEFFICIENT

#### 2.6.1 WATER SOLUBILITY

#### 2.6.2 SURFACE TENSION

### 2.7 FLASH POINT

## 2. Physico-Chemical Data

Id 79-04-9  
Date 05.12.2001

2.8 AUTO FLAMMABILITY

2.9 FLAMMABILITY

2.10 EXPLOSIVE PROPERTIES

2.11 OXIDIZING PROPERTIES

2.12 ADDITIONAL REMARKS

## 3.1.1 PHOTODEGRADATION

**Type** : air  
**Light source** : Sun light  
**Light spect.** : nm  
**Rel. intensity** : based on Intensity of Sunlight  
**Direct photolysis**  
**Halflife t1/2** : = 450 day  
**Degradation** : % after  
**Quantum yield** :  
**Deg. Product** :  
**Method** : other (calculated)  
**Year** :  
**GLP** :  
**Test substance** : as prescribed by 1.1 - 1.4  
**Deg. Product** : 79-11-8 Acetic acid, chloro-  
**Source** : The Dow Chemical Company  
**Reliability** : (1) valid without restriction  
 30.08.2001

(2)

## 3.1.2 STABILITY IN WATER

**Type** : abiotic  
**t1/2 pH4** : at degree C  
**t1/2 pH7** : < 30 minute(s) at 25 degree C  
**t1/2 pH9** : at degree C  
**Deg. Product** :  
**Method** : other  
**Year** :  
**GLP** : no data  
**Test substance** : as prescribed by 1.1 - 1.4  
**Result** : The cited article references experiments to determine the heat of hydrolysis of chloroacetyl chloride. It documents that the reaction, chloroacetyl chloride undergoing hydrolysis to produce hydrochloric acid and chloroacetic acid, required 2 hours to reach completion. The assumption can be made that "reach completion" means that >97% of the parent material has hydrolyzed. The corresponds to the completion of greater than 5 t1/2. Back-calculation then produces a t1/2 of less than 30 minutes, which is too short to be meaningful for environmental considerations.  
**Source** : The Dow Chemical Company  
**Reliability** : (1) valid without restriction  
 30.08.2001

(3)

## 3.1.3 STABILITY IN SOIL

## 3.2 MONITORING DATA

## 3.3.1 TRANSPORT BETWEEN ENVIRONMENTAL COMPARTMENTS

**Type** : fugacity model level III  
**Media** : other: mathematical modeling

### 3. Environmental Fate and Pathways

Id 79-04-9  
Date 05.12.2001

**Air (level I)** : 16  
**Water (level I)** : 84  
**Soil (level I)** : 0  
**Biota (level II / III)** : 0  
**Soil (level II / III)** : 66.7  
**Method** : other: Mackay Level I/III fugacity modeling  
**Year** : 2001  
**Source** : The Dow Chemical Company  
**Test condition** : Required Input Values for Level I/III Modeling of Chloroacetyl Chloride

Property	Value
Chemical Type	1
Molecular Mass (g/mol)	112.94
Water Solubility (g/m3)	3.99E+5
Vapor Pressure (Pa)	3300
Melting Point (0C)	-22
Estimated Henry's Law Constant (H) (Pa m3/mol) = (J/mol)	0.934
Kaw	
Air-Water Partition Coefficient	3.77E-4
Log Kow	
Octanol-Water Partition Coefficient	-0.22
Temperature (0C)	25
Amount of Chemical input to the System (kg)	100,000

**Reliability** : (1) valid without restriction  
05.12.2001

(4)

#### 3.3.2 DISTRIBUTION

#### 3.4 MODE OF DEGRADATION IN ACTUAL USE

#### 3.5 BIODEGRADATION

**Contact time** :  
**Degradation** : = 100 % after 28 day  
**Result** : readily biodegradable  
**Remark** : Because the material hydrolyzes quickly ( $t_{1/2} < 30$  min.) to chloroacetic acid and water, data quoted are taken from chloroacetic acid, summarized in IUCLID data sheet for CAS# 79-11-8. See that sheet for complete summary.  
**Source** : The Dow Chemical Company  
**Reliability** : (1) valid without restriction  
30.08.2001

#### 3.6 BOD5, COD OR BOD5/COD RATIO

**BOD5**  
**Method** :  
**Year** :  
**GLP** : no data  
**Concentration** : related to  
**BOD5** : = .36 mgO2/l  
**COD**

### 3. Environmental Fate and Pathways

Id 79-04-9  
Date 05.12.2001

Method :  
Year :  
GLP : no data  
COD : = .51 mg/g substance  
RATIO BOD5 / COD  
BOD5/COD : = .71  
Remark : Number cited in COD field is actually ThOD.  
Source : The Dow Chemical Company  
Reliability : (2) valid with restrictions  
30.08.2001

(1)

#### 3.7 BIOACCUMULATION

#### 3.8 ADDITIONAL REMARKS

## 4.1 ACUTE/PROLONGED TOXICITY TO FISH

**Type** :  
**Species** : Lebistes reticulatus (Fish, fresh water)  
**Exposure period** : 96 hour(s)  
**Unit** : mg/l  
**Analytical monitoring** :  
**LC50** : c = 369  
**Remark** : Because the material hydrolyzes quickly ( $t_{1/2} < 30$  min.) to chloroacetic acid and water, data quoted are taken from chloroacetic acid, summarized in IUCLID data sheet for CAS# 79-11-8. See that sheet for complete summary.  
**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions  
 30.08.2001

**Type** :  
**Species** : Leuciscus idus (Fish, fresh water)  
**Exposure period** : 96 hour(s)  
**Unit** : mg/l  
**Analytical monitoring** :  
**LC50** : c = 100 - 500  
**Remark** : Because the material hydrolyzes quickly ( $t_{1/2} < 30$  min.) to chloroacetic acid and water, data quoted are taken from chloroacetic acid, summarized in IUCLID data sheet for CAS# 79-11-8. See that sheet for complete summary.  
**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions  
 30.08.2001

**Type** :  
**Species** : Pimephales promelas (Fish, fresh water)  
**Exposure period** : 96 hour(s)  
**Unit** : mg/l  
**Analytical monitoring** :  
**LC50** : c = 145 - 164  
**Remark** : Because the material hydrolyzes quickly ( $t_{1/2} < 30$  min.) to chloroacetic acid and water, data quoted are taken from chloroacetic acid, summarized in IUCLID data sheet for CAS# 79-11-8. See that sheet for complete summary.  
**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions  
 30.08.2001

## 4.2 ACUTE TOXICITY TO AQUATIC INVERTEBRATES

**Type** :  
**Species** : Daphnia magna (Crustacea)  
**Exposure period** : 48 hour(s)  
**Unit** : mg/l  
**Analytical monitoring** :  
**EC50** : c = 22 - 75  
**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions  
 30.08.2001

(1)

## 4.3 TOXICITY TO AQUATIC PLANTS E.G. ALGAE

**Species** : Scenedesmus subspicatus (Algae)  
**Endpoint** : biomass  
**Exposure period** : 48 hour(s)  
**Unit** : mg/l  
**Analytical monitoring** :  
**EC50** : = .028  
**Remark** : Because the material hydrolyzes quickly ( $t_{1/2} < 30$  min.) to chloroacetic acid and water, data quoted are taken from chloroacetic acid, summarized in IUCLID data sheet for CAS# 79-11-8. See that sheet for complete summary.  
**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions  
 30.08.2001 (5)

**Species** : Scenedesmus subspicatus (Algae)  
**Endpoint** : biomass  
**Exposure period** : 72 hour(s)  
**Unit** : mg/l  
**Analytical monitoring** :  
**EC50** : = .025  
**Remark** : Because the material hydrolyzes quickly ( $t_{1/2} < 30$  min.) to chloroacetic acid and water, data quoted are taken from chloroacetic acid, summarized in IUCLID data sheet for CAS# 79-11-8. See that sheet for complete summary.  
**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions  
 30.08.2001

**Species** : Scenedesmus subspicatus (Algae)  
**Endpoint** : growth rate  
**Exposure period** : 48 hour(s)  
**Unit** : mg/l  
**Analytical monitoring** :  
**EC50** : = .07  
**Remark** : Because the material hydrolyzes quickly ( $t_{1/2} < 30$  min.) to chloroacetic acid and water, data quoted are taken from chloroacetic acid, summarized in IUCLID data sheet for CAS# 79-11-8. See that sheet for complete summary.  
**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions  
 30.08.2001 (6)

## 4.4 TOXICITY TO MICROORGANISMS E.G. BACTERIA

**Type** :  
**Species** : Pseudomonas putida (Bacteria)  
**Exposure period** : 3 hour(s)  
**Unit** : mg/l  
**Analytical monitoring** :  
**EC50** : = 750 - 1000  
**Remark** : Because the material hydrolyzes quickly ( $t_{1/2} < 30$  min.) to chloroacetic acid and water, data quoted are taken from chloroacetic acid, summarized in IUCLID data sheet for CAS# 79-11-8. See that sheet for complete summary.  
**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions  
 30.08.2001 (7)

**4.5.1 CHRONIC TOXICITY TO FISH****4.5.2 CHRONIC TOXICITY TO AQUATIC INVERTEBRATES**

**Species** : Daphnia magna (Crustacea)  
**Endpoint** : reproduction rate  
**Exposure period** : 21 day  
**Unit** : mg/l  
**Analytical monitoring** :  
**NOEC** : = 32  
**LCEC** : = 100  
**MATC** : = 56  
**Remark** : Because the material hydrolyzes quickly ( $t_{1/2} < 30$  min.) to chloroacetic acid and water, data quoted are taken from chloroacetic acid, summarized in IUCLID data sheet for CAS# 79-11-8. See that sheet for complete summary.

**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions  
30.08.2001 (8)

## 5.1.1 ACUTE ORAL TOXICITY

**Type** : LD50  
**Species** : rat  
**Strain** :  
**Sex** : male/female  
**Number of animals** : 2  
**Vehicle** : other: corn oil  
**Value** : ca. 1260 - 2500 mg/kg bw  
**Method** : other  
**Year** : 1955  
**GLP** : no data  
**Test substance** : no data  
**Method** : Young adult male and female rats were fasted overnight. They were administered the material as a 10% solution in corn oil at dose levels of 1260 (male) or 2500 (female) mg/kg bw. Animals were observed closely for two weeks, then submitted for pathological examination. All animals which died prior to scheduled necropsy were also submitted for pathological examination. Body weights were recorded on the day of treatment (Study Day 0), and Study Days 1, 8, and 15.

**Result** : Two of two males fed 1260 mg/kg bw died within 2 hours. Two of two females fed 2500 mg/kg bw survived the observation period with no weight loss.

**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions  
 30.08.2001

(1)

**Type** : LD50  
**Species** : rat  
**Strain** : Sprague-Dawley  
**Sex** : male/female  
**Number of animals** : 2  
**Vehicle** : other: corn oil  
**Value** : = 207 mg/kg bw  
**Method** : other  
**Year** : 1969  
**GLP** : no data  
**Test substance** : as prescribed by 1.1 - 1.4  
**Method** : Young adult male and female rats were fasted overnight. They were administered the material as a 50% solution in corn oil at dose levels of 126, 158, 200, or 251 mg/kg bw. Animals were observed closely for 9 days, then submitted for pathological examination. All animals which died prior to scheduled necropsy were also submitted for pathological examination. Body weights were recorded on the day of treatment.

**Result** : Survival time was several hours to 2 days with most deaths occurring within 1 day. Toxic signs included increasing weakness, collapse, and death. Survivors at lower dose levels showed normal weight gain in 7 days, while those at higher dose levels showed only slight weight gain. At autopsy for animals which failed to survive the observation period, the lungs and liver were hemorrhagic and there was gastrointestinal inflammation. Surviving animals were sacrificed 9 days after dosing. Macroscopic examination showed areas of lung congestion, slight discoloration of the liver, and slight gastrointestinal inflammation.

**Source** : The Dow Chemical Company

## 5. Toxicity

Id 79-04-9

Date 05.12.2001

**Reliability** : (2) valid with restrictions  
30.08.2001 (9)

### 5.1.2 ACUTE INHALATION TOXICITY

**Type** : LC50  
**Species** : rat  
**Strain** : Fischer 344  
**Sex** : male/female  
**Number of animals** : 6  
**Vehicle** :  
**Exposure time** : 1 hour(s)  
**Value** : = 660 ppm  
**Method** : EPA OPP 81-3  
**Year** :  
**GLP** : yes  
**Test substance** : as prescribed by 1.1 - 1.4  
**Method** : The test material was vaporized into stainless steel and glass 112 liter Rochester-type chambers using a j-tube apparatus. Groups of 6 male and 6 female Fischer 344 rats were exposed to concentrations of 32, 208, 522, or 747 ppm for one hour. nominal chamber concentrations during exposure were calculated based on the amount of test material used and the total air passed through the chamber during each exposure period. Chamber atmospheres were sampled and analyzed for test material content by high performance thin layer chromatography. Animals were observed during exposures and for 14 days after exposure. Body weights were collected on test days 1, 2, 4, 8, 11, and 15. A complete gross pathologic examination was conducted on each rat, either at death prior to study termination or at the end of the observation period.

**Source** : The Dow Chemical Company  
**Reliability** : (1) valid without restriction  
30.08.2001 (1)

**Type** : LC50  
**Species** : mouse  
**Strain** :  
**Sex** :  
**Number of animals** : 10  
**Vehicle** : other  
**Exposure time** : 2 hour(s)  
**Value** : = 2400 ppm  
**Method** : other  
**Year** : 1959  
**GLP** : no data  
**Test substance** : no data  
**Method** : Groups of 10 mice were exposed for 2 hours to a range of test material concentrations between 0.5 and 30 mg/l. In addition, groups of 10 mice were exposed for 5 minutes to a range of concentrations between 10 and 65 mg/l. The mice were exposed in giant glass bottles with a capacity of 72.7 and 74.1 l, in accordance with the Kravkov method. Mice were examined for signs of toxicity during the exposure period and for 5 days thereafter. Mice were submitted for macroscopic and microscopic pathological examination upon death or at the end of the observation period.

**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions

30.08.2001

(10)

**5.1.3 ACUTE DERMAL TOXICITY**

**Type** : LD50  
**Species** : rabbit  
**Strain** : New Zealand white  
**Sex** : male/female  
**Number of animals** : 2  
**Vehicle** :  
**Value** : = 316 - 501 mg/kg bw  
**Method** : other  
**Year** : 1969  
**GLP** : no data  
**Test substance** : as prescribed by 1.1 - 1.4  
**Method** :

Approximately 24 hours prior to dosing, the hair was removed from the trunk of 2 laboratory white rabbits/sex/dose with electric clippers. The test material was applied at 126, 200, 316, 501, 794, 1260, 200, 5010, or 10,000 mg/kg body weight under plastic strips. Following application the animals were held in wooden stocks for a 24-hour exposure period. The plastic strips were removed and the animals returned to their cages. The animals were observed during and after exposure and weighed at intervals up to two weeks post-application. The animals were submitted for necropsy examination after death or at the end of the observation period.

**Result** : Survival time was 3 hours to 2 days. Toxic signs included reduced appetite for 3 to 5 days in survivors, increasing weakness, dyspnea, collapse, and death. The test material was corrosive, with injury extending well in to the dermis. At autopsy for animals which died prior to the end of the observation period, there was slightly enlarged gall bladder and hemorrhagic lungs and liver. Surviving animals were sacrificed 14 days after dosing. The viscera appeared normal by macroscopic examination.

**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions

30.08.2001

(9)

**Type** : other: single dose dermal absorption study  
**Species** : rabbit  
**Strain** :  
**Sex** : male  
**Number of animals** : 1  
**Vehicle** :  
**Value** : = 100 mg/kg bw  
**Method** : other  
**Year** : 1970  
**GLP** : no data  
**Test substance** : no data  
**Method** : Approximately 24 hours prior to dosing, the hair was removed from the trunk of a laboratory white rabbit with electric clippers. The test material was applied at 100 mg/kg body weight under an impervious cuff held in place with a cloth bandage taped to the hair. Following application the animal was returned to a holding cage and allowed to eat and drink ad libitum. Following a 24-hour exposure period, the cuff was removed and the skin washed with soap and water. The animal was observed during and after exposure and weighed at

## 5. Toxicity

Id 79-04-9

Date 05.12.2001

**Result** : intervals up to two weeks post-application. The animal was then submitted for necropsy examination.

**Source** : Application of 100 mg/kg body weight for 24 hours resulted in slight to moderate necrosis at the application site. The rabbit failed to gain weight over a 2-week observation period.

**Reliability** : The Dow Chemical Company

30.08.2001 : (2) valid with restrictions (1)

### 5.1.4 ACUTE TOXICITY, OTHER ROUTES

#### 5.2.1 SKIN IRRITATION

**Species** : rabbit

**Concentration** : undiluted

**Exposure** : Occlusive

**Exposure time** : 24 hour(s)

**Number of animals** : 1

**PDII** :

**Result** : corrosive

**EC classification** :

**Method** : other

**Year** : 1970

**GLP** : no data

**Test substance** : no data

**Method** : These data were obtained during the conduct of a dermal absorption study. See Record 1, Acute Dermal Toxicity.

**Reliability** : (2) valid with restrictions (1)

30.08.2001

**Species** : rabbit

**Concentration** : undiluted

**Exposure** : Occlusive

**Exposure time** : 3 minute(s)

**Number of animals** : 1

**PDII** :

**Result** : corrosive

**EC classification** :

**Method** : other

**Year** : 1956

**GLP** : no data

**Test substance** : no data

**Method** : Male rabbits were prepared by shaving the hair from the entire abdomen with a straight razor and barber soap. The animal was then rested for several days to allow any abrasions to heal completely and to be sure skin was suitable for use. The material was applied undiluted for 0.5, 1 or 3 minutes to intact sites on the abdomen. Sites were covered with gauze pads and cloth bandages anchored to hair. Sites were inspected and graded when bandages were removed.

**Result** : Application to an intact site on the abdomen of a rabbit for 0.5 minutes caused very slight redness, very slight swelling, and necrosis. A similar application, left on for 1 minute, caused slight necrosis which, upon healing, left a scar. A similar application, left on for 3 minutes, caused slight redness and moderate necrosis which, upon healing,

## 5. Toxicity

Id 79-04-9  
Date 05.12.2001

<b>Source</b>	: left a scar.	
<b>Reliability</b>	: The Dow Chemical Company	
30.08.2001	: (2) valid with restrictions	(1)
<b>Species</b>	: rabbit	
<b>Concentration</b>	: undiluted	
<b>Exposure</b>	: Occlusive	
<b>Exposure time</b>	: 24 hour(s)	
<b>Number of animals</b>	: 3	
<b>PDII</b>	:	
<b>Result</b>	: corrosive	
<b>EC classification</b>	:	
<b>Method</b>	: other	
<b>Year</b>	: 1969	
<b>GLP</b>	: no data	
<b>Test substance</b>	: as prescribed by 1.1 - 1.4	
<b>Method</b>	: The backs of male and female rabbits were clipped. The test material was applied under plastic strips for 24 hours. Observations for irritation were made during exposure and for several days after application. The data were scored according to the Draize method.	
<b>Result</b>	: The average maximum Draize score was 8.0 out of 8.0 within 2 hours of exposure. Mild discomfort was immediately apparent. Within 10 minutes, the animals exhibited great discomfort with protruded eyes and erratic breathing. Within 1 hour, animals showed great discomfort, but no skin changes were apparent. Within 2 hours, the application sites had severe edema and severe erythema extending well beyond the area of exposure. Necrosis was obvious with injury extending well into the dermis. Within 168 hours, no change had occurred in the areas of necrosis except that the edema and erythema gradually disappeared.	
<b>Source</b>	: The Dow Chemical Company	
<b>Reliability</b>	: (2) valid with restrictions	(9)
30.08.2001		

### 5.2.2 EYE IRRITATION

<b>Species</b>	: rabbit	
<b>Concentration</b>	: undiluted	
<b>Dose</b>	: .1 ml	
<b>Exposure Time</b>	: .5 minute(s)	
<b>Comment</b>	:	
<b>Number of animals</b>	: 1	
<b>Result</b>	: corrosive	
<b>EC classification</b>	:	
<b>Method</b>	: other	
<b>Year</b>	: 1956	
<b>GLP</b>	: no data	
<b>Test substance</b>	: no data	
<b>Method</b>	: Both eyes of a male New Zealand White rabbit were stained with 5% fluorescein dye and examined for evidence of injury or alterations. The rabbit was then allowed to rest for 24 hours before test.	
	: Two drops of the material were introduced into the right eye. The eye was washed within 30 seconds for 2 minutes in a flowing stream of tepid water. Two drops of material were introduced in a similar fashion to the left eye, but this	

## 5. Toxicity

Id 79-04-9  
Date 05.12.2001

eye was left unwashed.

Immediately after instillation into each eye, the rabbit was examined for signs of discomfort. Within 2-3 minutes after the unwashed eye was treated, each eye was observed for conjunctival and corneal response. Similar observations were made on both eyes at 1 hour, 24 hours, 48 hours, and 6-8 days post-treatment. Examinations were conducted both with and without fluorescein dye.

**Result** : Both the washed and unwashed eyes had similar reactions to contact with the test material: slight pain, very severe conjunctival and corneal irritation which had not healed appreciably within one week. Blindness very probable.

**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions  
30.08.2001

(1)

**Species** : rabbit  
**Concentration** : undiluted  
**Dose** : .1 ml  
**Exposure Time** : .5 minute(s)  
**Comment** :  
**Number of animals** : 2  
**Result** : corrosive  
**EC classification** :  
**Method** : other  
**Year** : 1969  
**GLP** : no data

**Test substance** : as prescribed by 1.1 - 1.4  
**Method** : 0.1 ml of the material were introduced into the right eyes of a male and a female rabbit. In one rabbit, the eye was washed with warm isotonic saline within 30 seconds. In the other rabbit, the eye was washed with warm isotonic saline within 5 seconds.

Immediately after instillation into each eye, and at intervals for several days, the eye was examined for signs of discomfort and irritation. The observations were scored according to the Draize method.

**Result** : The maximum Draize score in each eye was 110 out of a possible 110. Immediately after instillation, the rabbits exhibited signs of severe discomfort, including pawing at the eye, keeping the eye closed, and squealing. Within 10 minutes, the eyes had moderate erythema, moderate edema, and discharge. The corneas were opaque, the iris invisible. This remained unchanged up to 168 hours, when the test was terminated.

**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions  
30.08.2001

(9)

### 5.3 SENSITIZATION

### 5.4 REPEATED DOSE TOXICITY

**Species** : rat  
**Sex** : male/female  
**Strain** : Fischer 344

## 5. Toxicity

Id 79-04-9  
Date 05.12.2001

**Route of admin.** : inhalation  
**Exposure period** : 6 hours/day  
**Frequency of treatment** : 5 days/week for 4 weeks  
**Post obs. period** : None  
**Doses** : 0, 0.5, 1, 2.5, or 5 ppm  
**Control group** : yes, concurrent vehicle  
**LOAEL** : = .5 - ppm  
**Method** : EPA OPP 82-4  
**Year** : 1982  
**GLP** : no data  
**Test substance** : as prescribed by 1.1 - 1.4  
**Method** : Inhalation exposures to CAC vapor or filtered air (control) were conducted under dynamic airflow conditions in 14.5 cubic foot stainless steel containers. Test material vapor was generated using a vaporization apparatus and mixed with filtered air to achieve the desired concentration. Nominal concentrations were calculated from this mixture. In addition, chamber concentrations were measured at regular intervals using a gas chromatograph/mass spectrometer. Groups of 10 rats, mice, and hamsters/sex were exposed to 0, 0.5, 1, 2.5, or 5 ppm for 6 hours/day, 5 days/week, for 4 weeks. Animals were observed daily during the test period. Body weights were recorded twice weekly. Blood samples were collected from animals which survived the study period, and clinical chemistry determination were conducted. All animals, including those which died prior to study termination, were submitted for gross necropsy examination. For animals which survived to study termination, brain, heart, liver, kidneys, and testes weights were collected. Samples of representative organs and tissues were saved in 10% neutral phosphate-buffered formalin. Tissues from up to half the dose groups were mounted for microscopic examination.

**Result** : Exposure to CAC resulted in grossly visible effects in the respiratory tract of rats inhaling 2.5 or 5 ppm; histopathologic changes were observed at doses as low as 0.5 ppm. These changes were a chronic response to an irritant, observed throughout the respiratory tract, most apparent and severe in the nasal region, and consisted of inflammation, hypertrophy, hyperplasia, and occasionally squamous metaplasia in the respiratory epithelium of the nasal mucosa. A NOEL was not established.

**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions  
Difficulty in analytical method for assessing chamber concentrations led to calculated mean values with large standard deviations. For this reason, dose levels quoted are the mean minimum analytical chamber concentrations.

30.08.2001

(1)

### 5.5 GENETIC TOXICITY 'IN VITRO'

**Type** : Ames test  
**System of testing** : TA98, TA100, TA1535, TA1537, TA1538  
**Concentration** : 0.5-500 micrograms/plate  
**Cycotoxic conc.** :  
**Metabolic activation** : with and without  
**Result** : negative  
**Method** : other

## 5. Toxicity

Id 79-04-9  
Date 05.12.2001

**Year** : 1976  
**GLP** : no data  
**Test substance** : as prescribed by 1.1 - 1.4  
**Method** : Standard methodology first developed by Ames, 1973.  
Arochlor 1254 was used to stimulate the metabolic activation system, derived from rat liver homogenate.  
**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions  
30.08.2001 (1)

**Type** : Yeast gene mutation assay  
**System of testing** : Saccharomyces cerevisiae  
**Concentration** : 0.01, 0.1, 0.2, 0.3, 0.4, 0.5%  
**Cycotoxic conc.** : 0.4, 0.5%  
**Metabolic activation** : with and without  
**Result** : negative  
**Method** : other  
**Year** : 1976  
**GLP** : no data  
**Test substance** : as prescribed by 1.1 - 1.4  
**Method** : Standard method for the in vitro yeast mitotic recombination assay. Arochlor 1254 was used to stimulate the metabolic activation system, derived from rat liver homogenate.  
**Source** : The Dow Chemical Company  
**Reliability** : (2) valid with restrictions  
30.08.2001 (1)

### 5.6 GENETIC TOXICITY 'IN VITRO'

### 5.7 CARCINOGENITY

### 5.8 TOXICITY TO REPRODUCTION

### 5.9 DEVELOPMENTAL TOXICITY/TERATOGENICITY

- (1) Unpublished data, The Dow Chemical Company
- (2) Meylan, W. (1997). SRC - AOP for Microsoft Windows, Version 1.84, Atmospheric half-life estimating software.
- (3) Pritchard, H. O., and Skinner, H. A. (1950). The heats of hydrolysis of the chloro-substituted acetyl chlorides. J. Chem. Soc. 1950: 272-276.
- (4) Use of Level I and Level III Fugacity-Based Environmental Equilibrium Partitioning Models to evaluate the Transport of Chloroacetyl Chloride (CAS No. 79-04-9). Unpublished data, The Dow Chemical Company.
- (5) Kuhn and Pattard (1990). Algal tox tests. Water Res. 24: 31-38.
- (6) Kuhn and Pattard (1990). Algal tox. tests. Water Res. 24: 31-38.
- (7) Gerike and Gode (1990). The biodegradability and inhibitory threshold concentration of some disinfectants. Chemosphere 21: 799-812.
- (8) Kuhn, et al. (1989). Results of the harmful effects of water pollutants to *Daphnia magna* in the 21-day reproduction test. Water Res. 23: 501-510.
- (9) Unpublished data, The Monsanto Company
- (10) Herzog, S. (1959). Cercetari experimentale asupra toxicitatii clorurii de cloracetil. Igiena. Bucharest 8: 135-144.

