



<b>BROMINE NUMBER TITRATION SOLVENT (DICHLORO METHANE FORMULATION)</b>	<b>MATERIAL SAFETY DATA SHEET SDS/MSDS</b>
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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Bromine Number Titration Solvent (Dichloro Methane formulation)  
Product Code : 811323

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Industrial & for professional use only.

### 1.3 Details of the supplier of the safety data sheet

Company : Central Drug House (P) Ltd  
7/28 Vardaan House  
Ansari Road Daryaganj  
New Delhi -110002  
INDIA  
Telephone : +91 11 49404040  
Email : [care@cdhfinechemical.com](mailto:care@cdhfinechemical.com)

### 1.4 Emergency telephone number

Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008

Acute Toxicity - Oral (Category 4), H302  
Acute Toxicity - Dermal (Category 4), H312  
Acute Toxicity - Inhalation (Category 3), H331  
Flammable liquids (Category 4), H227  
Corrosive to Metals (Category 1), H290  
Skin Corrosion (Category 1A), H314  
Eye Irritation (Category 1), H318  
Respiratory Sensitizer (Category 1), H334  
Carcinogenicity (Category 1), H350  
Reproductive toxicity (Category 1), H360  
Specific Target Organs/Systemic Toxicity Following Single Exposure (Category 1), H370  
Specific Target Organs/Systemic Toxicity Following Repeated Exposure (Category 1), H372  
Hazardous to the Aquatic Environment (Category 3), H402

For the full text of the Hazard and Precautionary Statements listed below, see Section 16

## 2.2 Label elements

### Labelling according Regulation (EC) No 1272/2008

#### Pictogram



Signal word

Danger

Hazard statement(s)

H227	Combustible liquid.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H402	Harmful to aquatic life.

Precautionary statement(s) **Number:**

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, sparks and open flame. No smoking.
P260	Do not breathe fumes, mist, vapors, or spray.
P264	Wash arms, hands and face thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves and eye protection.
P285	In case of inadequate ventilation wear respiratory protection.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P341	IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical attention.
P310	Immediately call a POISON CENTER or physician.
P312	Call a POISON CENTER or physician if you feel unwell.
P314	Get medical attention if you feel unwell.
P321	Specific treatment (Wash areas of contact with water. If possible, wipe off areas of contact with dry cloth before flushing with water).
P330	Rinse mouth.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER or physician.
P362	Take off contaminated clothing and wash it before reuse.
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use dry chemical, foam or carbon dioxide to extinguish.
P390	Absorb spillage to prevent material damage.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

Supplemental Hazard Statements

None

## 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative

and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### SECTION 3: Composition/information on ingredients

#### 3.1 Mixtures

##### Hazardous ingredients according to Regulation (EC) No 1272/2008 Name FS Number Weight%

Component	Formula	Molecular weight	CAS Number	Weight %
Acetic Acid	CH <sub>3</sub> COOH	60.05 g/mol	64-19-7	71.12 %
Methylene Chloride	CH <sub>2</sub> Cl <sub>2</sub>	84.93 g/mol	75-09-2	16.87 %
Methyl Alcohol	CH <sub>3</sub> OH	32.04 g/mol	67-56-1	10.00 %
Water	H <sub>2</sub> O	18.01 g/mol	7732-18-5	1.48 %
Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub>	98.07 g/mol	7664-93-9	0.53 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

##### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

##### If inhaled

If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

##### In case of skin contact

Take off immediately all contaminated clothing. Rinse skin with water. May cause serious damage to the skin. Effects may include redness, pain, skin burns.

##### In case of eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Eye contact may cause severe eye damage followed by loss of sight. Vapor exposure may cause watering and irritation to eyes.

##### If swallowed

Rinse mouth. Do NOT induce vomiting. Do not induce vomiting. Give large quantity of water. Call a physician immediately.

#### 4.2 Most important symptoms and effects, both acute and delayed

Danger! Corrosive liquid. May be fatal if swallowed. Causes severe burns to all areas of contact. Harmful if inhaled. Inhalation may cause lung and tooth damage. Immediately wash areas of contact with plenty of water for at least 15 minutes. If ingested, give large quantity of water. Do not induce vomiting. Call a physician immediately. Contains a suspected carcinogen. EYE CONTACT: Eye contact may cause severe eye damage followed by loss of sight. Vapor exposure may cause watering and irritation to eyes. SKIN CONTACT: May cause serious damage to the skin. Effects may include redness, pain, skin burns. CHRONIC EFFECTS / CARCINOGENICITY: Repeated exposures may cause erosion of exposed front teeth, darkening of skin and chronic inflammation of the nose, throat and bronchial tubes.

#### 4.3 Indication of any immediate medical attention and special treatment needed

Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water. If possible, wipe off areas of contact with dry cloth before flushing with water).

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

Use dry chemical, foam or carbon dioxide to extinguish. Use extinguishing media appropriate for surrounding fire. Water spray, dry chemical, alcohol foam, carbon dioxide

#### 5.2 Special hazards arising from the substance or mixture

Combustible liquid. Combustible liquid. Combustion may produce irritants and toxic gases. No flash point in conventional closed tester, but forms flammable vapor-air mixtures in larger volumes and may be an explosion hazard in a confined space. Combustion may produce irritants and toxic gases. Combustion by-products include hydrogen chloride and phosgene.

#### 5.3 Advice for firefighters

Wear full protective clothing and positive pressure self-contained breathing apparatus. Polyvinyl chloride barrier recommended. Wear special protective clothing and positive pressure self-contained breathing apparatus. Butyl rubber, Teflon, Viton, or Saranex barrier recommended.

#### 5.4 Further information

No data available

### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective gloves and eye protection. In case of inadequate ventilation wear respiratory protection.

#### 6.2 Cleanup and Containment Methods and Materials

Stop or control the leak, if this can be done without undue risk. Control runoff and isolate discharged material for proper disposal. Use water spray to cool and disperse vapors, protect personnel, and dilute spills to form nonflammable mixtures. Use soda ash to neutralize spills. Control runoff and isolate discharged material for proper disposal.

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Avoid inhalation of vapour or mist.

For precautions see section 2.2.

#### 7.2 Conditions for safe storage, including any incompatibilities

Store in corrosive resistant container with a resistant inner liner. Protect from freezing and physical damage.

#### 7.3 Specific end use(s)

No data available

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

#### 8.2 Exposure controls

##### Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

##### Personal protective equipment

###### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

###### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

###### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

###### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use (EN 143) respirator cartridges as a backup to engineering controls. If th full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

###### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

a) Appearance	Form: liquid Colour: colourless
b) Odour	No data available
c) Odour Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	No data available
f) Initial boiling point and boiling range	No data available
g) Flash point	No data available
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	No data available
l) Vapour density	No data available
m) Relative density	1.0 – 1.1 g/ml
n) Water solubility	Miscible with water
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

### 9.2 Other safety information

No data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under normal conditions of use and storage.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Keep away from heat, sparks and open flame. No smoking. Keep only in original container. Strong bases, strong oxidizers, chromic acid, sodium peroxide, nitric acid, perchloric acid. Will attack some forms of plastics, rubber and coatings.

## 10.6 Hazardous decomposition products

No data available

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute oral toxicity

Harmful if swallowed. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. Dispose of contents in accordance with local, state, federal and international regulations.

#### Acute dermal toxicity

Harmful in contact with skin. Wear protective gloves and eye protection. IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Specific treatment (Wash areas of contact with water. If possible, wipe off areas of contact with dry cloth before flushing with water). Take off contaminated clothing and wash it before reuse. Dispose of contents in accordance with local, state, federal and international regulations.

#### Acute dermal toxicity

Toxic if inhaled. Avoid breathing fumes, mist, vapors, or spray. Use only outdoors or in a well-ventilated area. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water. If possible, wipe off areas of contact with dry cloth before flushing with water). Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

#### Skin corrosion/irritation

Causes severe skin burns and eye damage. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water. If possible, wipe off areas of contact with dry cloth before flushing with water). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

#### Serious eye damage/eye irritation

Causes serious eye damage. Wear protective gloves and eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

#### Respiratory or skin sensitization

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Avoid breathing fumes, mist, vapors, or spray. In case of inadequate ventilation wear respiratory protection. IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or physician. Dispose of contents in accordance with local, state, federal and international regulations.

#### Germ cell mutagenicity

No data available

#### Carcinogenicity

May cause cancer. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection. IF exposed or concerned: Get medical attention. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

#### Reproductive toxicity

May damage fertility or the unborn child. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection. IF exposed or concerned: Get medical attention. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

**Specific target organ toxicity - single exposure**

Causes damage to organs. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. IF exposed: Call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water. If possible, wipe off areas of contact with dry cloth before flushing with water). Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

**Specific target organ toxicity - repeated exposure**

Causes damage to organs through prolonged or repeated exposure. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Get medical attention if you feel unwell. Dispose of contents in accordance with local, state, federal and international regulations.

**Aspiration hazard**

No data available

**Additional Information**

No data available

**SECTION 12: Ecological information**

**12.1 Toxicity**

Harmful to aquatic life. Avoid release to the environment. Dispose of contents in accordance with local, state, federal and international regulations. Harmful to aquatic life. Avoid release to the environment. Dispose of contents in accordance with local, state, federal and international regulations.

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.6 Other adverse effects**

No data available

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

**SECTION 14: Transport information**

**14.1 UN number**

ADS/RID: 2790

IMDG: 2790

IATA: 2790

**14.2 UN proper shipping name**

ADR/RID: ACETIC ACID SOLUTION

IMDG: ACETIC ACID SOLUTION

IATA: Acetic Acid Solution

<b>14.3 Transport hazard class(es)</b> ADR/RID: 8	IMDG: 8	IATA: 8
<b>14.4 Packaging group</b> ADR/RID: II	IMDG: II	IATA: II
<b>14.5 Environmental hazards</b> ADR/RID: no	IMDG Marine pollutant: no	IATA: no
<b>14.6 Special precautions for user</b> No data available		

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

### 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

## SECTION 16: Other information

### Full text of H-Statements referred to under sections 2 and 3.

H227	Combustible liquid.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H402	Harmful to aquatic life.

### Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.cdhfinechemical.com](http://www.cdhfinechemical.com) for additional terms and conditions of sale.