# MATERIAL SAFETY DATA SHEET(MSDS)

MSDS no: AA00199-0000000201

# 1. Product and company identification

a) Product name: CW-1030 ECC-2000

b) Application of the substance

Recommended use Electronic contact clean
Restriction on use Do not use for other purposes

c) Details of the manufacturer / supplierCompany: HUMANTECH CORPORATION

Address: 701 SAMSUNG IT VALLEY 197-5, GURO 3DONG, GURO-GU, SEOUL, KOREA

Phone number: 82-2-2022-3584

# 2. Hazards identification

a) Hazard-Risk Classification

High pressure gas: compressed gas Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2

Reproductive toxicity: Category 2

Specific target organ toxicity (single exposure): Category 2

Specific target organ toxicity (single exposure): Category 3 (anesthetic action)

Chronic aquatic environmental hazard: Category 3

Ozone layer toxicity: Category 1

b) Label elements including precautionary statements

- Symbol:







- Signal Word: Danger
- Hazard-Risk Statement:

H280 Contains gas under pressure; may explode if heated

H315 Causes skin irritation

H319 Causes serious eye irritation

H336 May cause drowsiness or dizziness

H361 Suspected of damaging the fetus or fertilityH412 Harmful to aquatic life with long lasting effects

H420 harmful to public health and the environment by destroying the ozone layer in the upper atmosphere.

# - Precautionary Statement:

#### 1) Prevention

P201 Ottain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust, fume, gas, mist, vapor or spray.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash ··· 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/protective clothing/eye protection/face protection.

#### 2) Response

P302+P352 IF ON SKIN: Wash with plenty of water and soap.

P304+P340 If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses if possible.

P308+P311 If exposed or concerned about exposure, call a POISON CENTER or doctor/physician.

P308+P313 If exposed or concerned, seek medical advice/attention.

P332+P313 If skin irritation or redness occurs, seek medical advice/attention.

P312 If you feel unwell, seek medical advice (physician).

P321 Take appropriate treatment.

P337+P313 If eye irritation persists, get medical advice/attention.

P362+P364 Remove contaminated clothing and wash before reuse

3) Storage

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P410+P403 Protect from sunlight. Store in a well-ventilated place.

4) Disposal

P501 Dispose of contents and container in accordance with the relevant laws and regulations.

P502 For recycling, please refer to the information on recycling provided by the manufacturer/sup

c) Other Hazard-Risk which are not included in the classification criteria

Not available

3. Composition/Imformation on ingredientsChemical nameOther nameCAS numberContents(%)1,1-dichloro-1-fluoroethane-1717-00-670~801,1,1,2-Tetrafluoroethane-811-97-220~30

## 4. First aid measures

a) Eye contact

Take the emergency medical attention.

Rinse opened eye for several minutes under running water.

b) Skin contact

Wash skin with soap and water.

Call a POISON CENTER or doctor/physician if you feel unwell.

If on skin(or hair): Take off immediately all contaminated clothing. Rinse

skin with water/shower.

c) Inhalation

Take the emergency medical attention.

Move the fresh air.

If breathing is difficult, give the oxygen.

If not breathing, give artificail respiration.

d) Ingestion

Take the emergency medical attention.

e) Indication of immediate medical attention and notes for physicain.

Not available

# 5. FIRE FRGHTING MEASURES

a) Suitable(and un suitable) extingishing media

CO2 or water spray, powder fire extingiusher

Dry sand or soil

b) Specific hazards arising from the chemical(e.g. nature of any hazardous combusion products)

Container may explode when heated

Steam may cause dizziness or suffocation without awareness.

If inhalation or contact, Skin and eye may be irritating

If inhalation or ,Skin absortion, Toxicity accrue

c) Specail protective equipment and precautions for fire-fighters

Rescurer wear suitable protective equipment.

If not dangerous, Containers move fire area.

Keep a safe distance outside area

#### 6. Accidental release measures

a) Personal precautions, protective equipment and emergency procedures

Avoid breathing dust/fume/gas/mist/vapours/spray.

Do not touch or walk around the leakage.

If people do not need to enter or wear protective equipment, do not access

Wear protective equipment.

Keep unprotected persons away.

b) Environmental precautions and protective procedures

Avoid release to the environment.

Prevent entry into waterways, sewers, basements.

c) Methods and materials for containment and cleaning up

Absorb the liquid and rinse contaminated area with water and detergent.

Absorb the leakage (with dry sand or soil) and put a chemical waste container

Make the ditch away from the leakage in case of large spill.

# 7. Handling and storage

a) Precautions for safe handling

Obtain special instructions before use.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Do not pressure or cutting or welding, soldering, bonding, drilling, grinding,

Do not expose by heat exposure, flame, sparks, static electricity, etc.

Prevent skin contact for long time.

Wash hands thoroughly after handling.

Please note that material and conditions to avoid.

Use your only in a well ventilated area.

b) Conditions for safe storage(including any incompatibilities)

Keep away from heat, sparks, open flames, hot surfaces. - No smoking.

Please note that material and conditions to avoid.

Store in a well-ventilated place. Keep cool.

## 8. Exposure controls & personal protection

a) Control parameters(e.g. occupational exposure limit values, biological limit values)

1 1,1-dichloro-1-fluoroethane

KOREATWA-500ppm

ACGIH Not available

KOREATWA-1000ppm, 3500mg/m³ STEL-1250ppm, 4375mg/m³

ACGIH TWA-1000ppm

KOREA Not available

ACGIH Not available

b) Appropriate engineering controls

Keep away from fooddstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

- c) Personal protective equipment
- Respiratory protection

In case of brief exposure or low pollution use respiratory filter device.

In case of intensive or longer exposure use self-contained respiratory protective device.

- Eye protection

Wear safety goggles.

- Hands protection

Protective glove: The glove material has to be impermeable and resistant to the product/ the substance/the preparation.

Body protection

Unknown

#### 9. Physical and chemical properties

a) Appearance(physical state, color etc)

Transparent liquid
Specific solvent Odor

c) Odour threshold

b) Odour

Not available

d) pH Not available e) Melting point/freezing point Not available f) Initial boiling point and boiling range Not available g) Flash point Not available h) Evaporation rate Not available i) Flammability(solid, gas) Not available j) Upper/lower flammability or explosive limits Not available k) Vapor pressure Not available I) Solubility Not available m) Vapor density Not available n) Relative density 1.24±0.05 o) Partiton coefficient Not available Not available p) Auto-ignition temperature Not available q) Decomposition temperature r) Viscosity Not available s) Molecular mass Not available

## 10. Stability and reactivity

a) Chemical stability and possibility of hazardous reactions

May be explode when heated.

In case of fire may cause an irritating and toxic gases.

b) Condition to avoid(e.g. static discharge, shock or vibration, etc)

Keep away from heat, sparks, open flames, hot surfaces. - No smoking.

Avoid contact with incompatible materials.

c) Incompatible materials

Oxidant, base, metal, alkaly metal, Litium, plastic, rubber.

d) Hazardous decomposition products

Irritating gases, toxic gases

It stimulated by thermal decomposition or burning during the fire burning and very toxic gas that can be generated.

## 11

1. Toxicological information			
a) Information on the likely routes of exposure	Unknown		
b) Health hazards information			
① 1,1-dichloro-1-fluoroethane			
<ul> <li>Acute toxic</li> </ul>			
Oral	LD50 > 5000mg/kg Rat		
Dermal	LD50 > 2000mg/kg Rat		
Inhale	LC50 62100ppm 4hr Rat		
<ul> <li>Skin corrosive/irritant</li> </ul>	Not available		
- Serious eye damage/eye irritation	Not available		
<ul> <li>Respiratory sensitization</li> </ul>	Not available		
<ul> <li>Carcinogenicity</li> </ul>	Not available		
- Germ cell Mutagenicity	Not available		
<ul> <li>Reproductive toxicity</li> </ul>	Not available		
<ul> <li>Specific target organ toxicity(single exposure)</li> </ul>	Not available		
- Specific target organ toxicity(repeated exposure)	Not available		
<ul> <li>Aspiration hazard</li> </ul>	Not available		
@1,1,1,2-Tetrafluoroethane			
<ul> <li>Acute toxic</li> </ul>			
Inhale	LC50 359453.1 mg/kg 4 hr Rat		
- Skin corrosive/irritant	Causes skin irritation		
<ul> <li>Serious eye damage/eye irritation</li> </ul>	Causes eye irritation		
<ul> <li>Respiratory sensitization</li> </ul>	Not available		
<ul> <li>Carcinogenicity</li> </ul>	Not available		
- Germ cell Mutagenicity	Not available Although the mammalian maternal toxicity was 40,000 ppm (rabit) and the maternal		
<ul> <li>Reproductive toxicity</li> </ul>	fetal toxicity was 100,000 ppm (RAT), no teratogenic effects were observed at any		

exposure limit.

- Specific target organ toxicity(single exposure)

Rapid vapors of liquid cause frostbite.
Foreign bodies can affect the central nervous system and cardiovascular system and cause heart disease

- Specific target organ toxicity(repeated exposure)

According to the data, repeated exposure has not been proven in any particular immune system or nervous system.

Aspiration hazard

Not available

#### 12. Ecological information

a)	Aquatic and terrestrial ecotoxicity	No further relevant information available.
b)	Persistence and degradability	No further relevant information available.
c)	Bioaccumulative potential	No further relevant information available.
d)	Mobility in soil	No further relevant information available.
e)	Other adverse effects	No further relevant information available.

# 13. Disposal consideration

a) Disposal method

Disposal must be made according to officail regulations.

b) Disposal precaution(including the disposal method of contaminated container and packaging)
 Not available

#### 14. Transport information

a) UN number	1950	
b) UN proper shipping name	AEROSOLS	
c) Transport hazard class	Class 2.2	
d) Packing proup(if applicable)	Not available	
e) Marine pollution(yes/no)	Not available	
f) Special precaution which a user to vie aware of or needs to comply with in connection v		

f) Specail precaution which a user to vie aware of or needs to comply with in connection with transport or conveyance either within or outside their premises

Not available

## 15. Regulatory information

a) Industrial safety and health act

Working environment measurement substances

Hazardous substances requiring management

b) Toxic chemical control act

c) Danerous material safety control act

d) Wastes management act

Not available

e) Other requirements in ddomestic and other countries

Not available

#### 16. Other information

a) Information source and refernces

Occupation safety and health acts

**KOSHA** 

Material manufactuerer

**NCIS** 

b) Issuing date 2011년 10월 26일

c) Revision number and date

Revision number 5

Date 2023년 07월 24일

d) others

The information contained in this Material Safety Data Sheet, as of the issue data, is believes to be true and correct. However, the accuracy or completeness of this information and any recommendations or suggestions are made without warrnaty or guarntee.

Since the conditions of use are beyond the control of our company, it is the responsibility of the user to determine the conditions of safe use of this preparation.