

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 / supplier
- Company : 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 fertility
- H412 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 Obtain 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/Information on ingredients

Chemical name	Other name	CAS number	Contents(%)
1,1-dichloro-1-fluoroethane	-	1717-00-6	70~80
1,1,1,2-Tetrafluoroethane	-	811-97-2	20~30

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 artificial respiration.

d) Ingestion

Take the emergency medical attention.

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

Not available

5. FIRE FIGHTING MEASURES

a) Suitable(and unsuitable) extinguishing media

CO2 or water spray, powder fire extinguisher

Dry sand or soil

b) Specific hazards arising from the chemical(e.g. nature of any hazardous combustion 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 absorption, Toxicity accrue

c) Special protective equipment and precautions for fire-fighters

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
l) Solubility	Not available
m) Vapor density	Not available
n) Relative density	1.24±0.05
o) Partiton coefficient	Not available
p) Auto-ignition temperature	Not available
q) Decomposition temperature	Not available
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. Toxicological information

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|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| a) Information on the likely routes of exposure | Unknown |
| b) Health hazards information | |
| ① 1,1-dichloro-1-fluoroethane | |
| - Acute toxic | |
| Oral | LD50 > 5000mg/kg Rat |
| Dermal | LD50 > 2000mg/kg Rat |
| Inhale | LC50 62100ppm 4hr Rat |
| - Skin corrosive/irritant | Not available |
| - Serious eye damage/eye irritation | Not available |
| - Respiratory sensitization | Not available |
| - Carcinogenicity | Not available |
| - Germ cell Mutagenicity | Not available |
| - Reproductive toxicity | Not available |
| - Specific target organ toxicity(single exposure) | Not available |
| - Specific target organ toxicity(repeated exposure) | Not available |
| - Aspiration hazard | Not available |
| ②1,1,1,2-Tetrafluoroethane | |
| - Acute toxic | |
| Inhale | LC50 359453.1mg/kg 4 hr Rat |
| - Skin corrosive/irritant | Causes skin irritation |
| - Serious eye damage/eye irritation | Causes eye irritation |
| - Respiratory sensitization | Not available |
| - Carcinogenicity | Not available |
| - Germ cell Mutagenicity | Not available |
| - Reproductive toxicity | Although the mammalian maternal toxicity was 40,000 ppm (rabit) and the maternal fetal toxicity was 100,000 ppm (RAT), no teratogenic effects were observed at any exposure limit. |

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|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| - 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

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|----------------------------------------|--------------------------------------------|
| 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

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|-----------------------------------------------------------------------------------------------|----------------------------------------------------------|
| a) Disposal method | Disposal must be made according to official regulations. |
| b) Disposal precaution(including the disposal method of contaminated container and packaging) | Not available |

14. Transport information

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| a) UN number | 1950 |
| b) UN proper shipping name | AEROSOLS |
| c) Transport hazard class | Class 2.2 |
| d) Packing group(if applicable) | Not available |
| e) Marine pollution(yes/no) | Not available |
| f) Special precaution which a user to be 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 | Not available |
| c) Dangerous material safety control act | Not available |
| d) Wastes management act | Not available |
| e) Other requirements in domestic and other countries | Not available |

16. Other information

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|--------------------------------------|-----------------------------------------------------------------------------|
| a) Information source and references | Occupation safety and health acts
KOSHA
Material manufacturer
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 date, is believed to be true and correct. However, the accuracy or completeness of this information and any recommendations or suggestions are made without warranty or guarantee.

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.