

Material Safety Data Sheet

TruPower CV Coolant

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

A. PRODUCT NAME	897 0009 10
B. INTENDED USE	Engine Coolant for CV
C. MANUFATURER & SUPPLIER INFORMATION	
MANUFATURER	Kukdong Jeyen Co., Ltd (+82-31-680-0505 Fax. +82-31-680-0507)
ADDRESS	#1173-4 Wonjeong-ri Poseung-eup Pyeongtaek-si Gyeonggi-do Korea
SUPPLIER	Schaeffler Korea Corp. (+82-2-311-3479)
ADDRESS	Parc 1 Tower 1, 32F, 108 Yeoui-daero, Yeongdeungpo-gu, Seoul, 07335, Korea

2. HAZARDS IDENTIFICATION

A. HAZARD CLASSIFICATION	
Physicochemical	Not Classified
Health hazards	Specific target organ toxicity following repeat exposure : Category 2
Environmental hazards	Not Classified
B. PRECAUTIONARY STATEMENT(S) & WARNING LABEL	
Pictograms	
Signal words	Caution
Hazard Statements	H373 - May causes damage to organ(central nervous system, respiratory tract, heart) through prolonged or repeated exposure
Precautionary Statement(s)	Precautionary P260 : Do not breathe dust/fume/gas/mist/vapors/spray P314 : Get medical advice/attention if you feel unwell
Response	P314 : Get medical advice/attention if you feel unwell
Storage	Not Classified
Disposal	P501 : Dispose of contents and container in accordance with applicable regulations
C. Other hazards	

Chemcals Name	NFPA Ratings		
	Health	Fire	Reactivity
1. ETHYLENE GLYCOL	0	1	0
2. WATER	0	0	0
3. Sebacic Acid	0	1	0
4. BUSINESS SECRET(S1)	0	1	0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Other name	CAS No.	%
1) ETHYLENE GLYCOL	1,2-Ethanediol 1,2-Dihydroxyethane	107-21-1	45 ~ 55%
2) WATER	DIHYDROGEN OXIDE	7732-18-5	45 ~ 50%
3) Sebacic Acid	Decanedioic acid	111-20-6	1 ~ 2 %
4) BUSINESS SECRET(S1)	-	-	1 ~ 2 %

4. FIRST AID MEASURES

A. EYE CONTACT	Move to fresh air Flush thoroughly with water at least 15 minutes Get medical assistance
B. SKIN CONTACT	Wash contact areas with soap and water Remove contaminated clothing and shoes Get medical aid if irritation develops and persists Wash clothing before reuse
C. INHALATION	If inhaled, remove to fresh air If not breathing give artificial respiration Get medical aid
D. INGESTION	Potential for aspiration if swallowed Get medical aid Do not induce vomiting unless directed to do so by medical personnel Never give anything by mouth to an unconscious person If swallowed, seek medical attention immediately
E. LIKELY ACUTE OR DELAYED SYMPTOMS/EFFECTS	
1) Inhalation	Short term exposure : Irritation, Sleepiness, Headache, Dizziness, Blood disorder Long term exposure : Irritation, Headache
2) Skin contact	Short term exposure : Vomiting, Gastralgia, Headache, Dizziness, Sleepiness, Hallucination, Convulsions, Coma, Allergic reaction Long term exposure : Irritation, Allergic reaction
3) Eye contact	Short term exposure : Irritation Long term exposure : No data available
4) Ingestion	Short term exposure : Vomiting, Gastralgia, Headache, Dizziness, Sleepiness, Hallucination, Convulsions, Coma Long term exposure : Kidney trouble
F. EMERGENCY MEASURE / NOTES TO PHYSICIAN	Support vital functions Correct for dehydration and manage fluid balance Administer ethanol (orally or by IV (intravenously)) or fomepizole (4-methylpyrazole or antizol)) therapy by IV as an antidote to inhibit the ormation of toxic metabolites

5. FIRE FIGHTING MEASURES

A. EXTINGUISH MEDIA	
1) Suitable extinguishing media	Fog, foam, dry Chemical powder
2) Unsuitable extinguishing media	No data available
3) Unusual fire (Big fire)	Do use extinguishing media with water fog
B. UNUSUAL FIRE & EXPLOSION HAZARD	
1) Hazardous combustion product	CO (carbon monoxide), CO2 (carbon dioxide)
2) Fire & Explosion hazard	Slightly flammable to flammable in presence of open flames and sparks, of heat Non-flammable in presence of shocks

C. SPECIAL FIRE FIGHTING PROCEDURE/PROTECTION OF FIREFIGHTERS	Wear self-contained breathing apparatus for firefighting if necessary
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6. ACCIDENTAL RELEASE MEASURE

A. PERSONAL PRECAUTIONS	Shut off all sources of ignition Wear self-contained breathing apparatus
B. ENVIRONMENTAL PRECAUTIONS	
1) Atmosphere release	No data available
2) Soil release	No data available
3) Underwater release	No data available
C. SPILL CLEANUP METHODS	
1) Small liquid spill	Use a non-combustible material like sand to soak up the product and place into a contain for later disposal
2) Large spillages	No data available

7. HANDLING AND STORAGE

A. HANDLING	Keep away from heat Keep away from sources of ignition Empty containers pose a fir risk Evaporate the residue under a fume hood Ground all equipment containing material Do not ingest Do not breathe gas/fumes/vaper/spray Wear suitable protective clothing If ingested, seek medical advice Immediately and show the container or the label
B. STORAGE	Keep away from incompatibles such as oxidizing agents, acids, alkalis Keep container tightly closed Keep container in a cool Well-ventilated area

8. EXPOSURE CONTROLS/PESONAL PROTECTION

A. EXPOSURE LIMIT VALUE	
1) ETHYLENE GLYCOL	
Korea	TWA : - STEL : C100 mg/m3
ACGIH	VTL-TWA : ppm 100 mg/m³ VTL-STEL : -
OSHA	No data available
2) WATER	
Korea	TWA : No data available STEL : No data available
ACGIH	VTL-TWA : No data available VTL-STEL : No data available
OSHA	No data available
3) SEBACIC ACID	
Korea	TWA : No data available STEL : No data available
ACGIH	VTL-TWA : No data available VTL-STEL : No data available
OSHA	No data available

4) BUSINESS SECRET(S1)	
Korea	TWA : No data available STEL : No data available
ACGIH	VTL-TWA : No data available VTL-STEL : No data available
OSHA	No data available
B. ENGINEERING CONTROL	Adequate ventilation (localize ventilation) should be provided in workplaces Use non sparking tools
C. PERSONAL PROTECTIVE EQUIPMENT	
1) Respiratory protection	Prevent inhalation of the solvents If required to control exposure, use only suitable respirators and components tested and approved under appropriate government standards such as NIOSH
2) Eye protection	Wear approved chemical safety glasses or goggles where eye exposure is reasonably probable Eye wash fountain is recommended
3) Hand protection	Wear protective gloves Butyl rubber gloves are recommended
4) Skin / Body protection	Wear protective cloths

9. PHYSICAL AND CHEMICAL PROPERTIES

A. APPEARANCE	
Physical state	Liquid
Color	RED
B. ODOR	Softly peculiar smell
C. ODOR THRESHOLD	No data available
D. pH	7.0 ~ 9.0
E. MELTING/FREEZING POINT	-34 °C
F. BOILING POINT/RANGE	173°C / More than 150 °C
G. FLASH POINT	More than 111 °C
H. EVAPORATION RATE	No data available
I. FLAMMABILITY	15.3% / 3.2%
LIMIT(LOWER/UPPER)	
J. VAPOR PRESSURE	0.05 mmHg (20 °C)
K. VAPOR PRESSURE	Soluble
L. SOLUBILITY	Insoluble in water
M. VAPOR DENSITY (Air=1)	About 4
N. SPECIFIC GRAVITY	1.00 ~ 1.10
O. PARTITION COEFFICIENT (N-OCTANOL/WATER)	No data available
P. AUTO-IGNITION TEMPERATURE	More than 390 °C
Q. THERMAL DECOMPOSITION	No data available
R. VISCOSITY	36.01cst (15°C), 18.09cst (20°C)
S. MOLECULAR WEIGHT	Not Applicable / Mixture

10. STABILITY AND REACTIVITY

A. STABILITY	Stable under normal temperatures and pressures
B. POSSIBILITY OF HAZARDOUS REACTION	Has not been reported
C. CONDITION TO AVOID	Ignition source Excess heat, flame
D. INCOMPATIBLE MATERIAL	Oxidizing agents, acid, alkalies
E. HAZARDOUS DECOMPOSITION PRODUCTS	Hydrocarbon compounds

11. TOXICOLOGICAL INFORMATION

A. ROUTE OF EXPOSURE

- | | |
|-----------------|-------------------|
| 1) Inhalation | No data available |
| 2) Ingestion | No data available |
| 3) Skin contact | No data available |
| 4) Eye contact | No data available |

B. DELAYED, IMMEDIATE, AND CHRONIC EFFECTS OF SHORT-AND LONG-TERM EXPOSURE

1) ETHYLENE GLYCOL

- | | |
|---|---|
| Acute toxicity | Oral : LD50 7712 mg/kg Rat
Skin : LD50 3500 mg/kg Mouse
Inhalation : Steam LC50 2.5 mg/l 6hr Rat |
| Skin contact | Skin - Rabbit(Ethylene glycol) Result: No skin irritation |
| Eye contact or Irritation | Eyes - Rabbit(Ethylene glycol) Result: Mild eye irritation - 24 h |
| Sensitization | No data available |
| Carcinogenicity | KOSHA : Not listed
OSHA : Not listed
NTP : Not listed
IARC (GROUP) : Not listed
ACGIH : A4
EC : Not listed |
| Mutagenesis | No data available |
| Reproductive toxicity | Laboratory experiments have shown teratogenic effects
Overexposure may cause reproductive disorder(s) based on tests with laboratory animals |
| Specified target organ general toxicity | single exposure : No data available

repetitive exposure : May cause damage to organs through prolonged or repeated exposure - Kidney |
| Aspiration respiratory organs hazard | No data available |

2) WATER

- | | |
|---|---|
| Acute toxicity | Oral : LD50 90000 mg/kg Rat (LD50 > 90 ml/kg (Rat))
Skin : No data available
Inhalation : No data available |
| Skin contact | No data available |
| Eye contact or Irritation | No data available |
| Sensitization | No data available |
| Carcinogenicity | KOSHA : Not listed
OSHA : Not listed
NTP : Not listed
IARC (GROUP) : Not listed
ACGIH : Not listed
EC : Not listed |
| Mutagenesis | No data available |
| Reproductive toxicity | No data available |
| Specified target organ general toxicity | single exposure : No data available

repetitive exposure : No data available |
| Aspiration respiratory organs hazard | No data available |

3) SEBACIC ACID

- | | |
|---------------------------|--|
| Acute toxicity | Oral : LD50 13475 mg/kg Rat
Skin : No data available
Inhalation : Dust LD50 4500 mg/m ³ Rat |
| Skin contact | Rabbit- skin - slight irritation |
| Eye contact or Irritation | Rabbit - eyes - Irritation |
| Sensitization | No data available |
| Carcinogenicity | KOSHA : Not listed |

	OSHA : Not listed
	NTP : Not listed
	IARC (GROUP) : Not listed
	EC: Not listed
Mutagenesis	No data available
Reproductive toxicity	No data available
Specified target organ general toxicity - single exposure	No data available
Specified target organ general toxicity - repetitive exposure	No data available
Aspiration respiratory organs hazard	No data available
4) BUSINESS SECRET(S1)	
Acute toxicity	Oral : LD50 2000 mg/kg Rat Skin : No data available Inhalation : No data available
Skin contact	No data available
Eye contact or Irritation	No data available
Sensitization	No data available
Carcinogenicity	KOSHA : Not listed OSHA : Not listed NTP : Not listed IARC (GROUP) : Not listed ACGIH : Not listed EC: Not listed
Mutagenesis	No data available
Reproductive toxicity	No data available
Specified target organ general toxicity	single exposure : No data available
Specified target organ general toxicity	repetitive exposure : No data available
Aspiration respiratory organs hazard	No data available

12. ECOLOGICAL INFORMATION

A. ECOTOXICITY

1) ETHYLENE GLYCOL	Fishes : LC50 72860 mg/l 96hr Pimephales promelas Crustacea : LC50 MIN 100 mg/l 48hr Daphnia magna(OECD Guideline 202, GLP) Seaweeds : EC50 6500~13000 mg/l 96hr (Pseudokirchneriella subcapitata, EPA 600/9-78-018)
2) WATER	Fishes : No data available Crustacea : No data available Seaweeds : No data available
3) SEBACIC ACID	Fishes : LC50 993.789 mg/l 96 hr Crustacea : LC50 1078.932 mg/l 48 hr Seaweeds : EC50 681.937 mg/l 96 hr
4) BUSINESS SECRET(S1)	Fishes : LC50 MIN 100 mg/l 96hr Pimephales promelas Crustacea : LC50 MIN 100 mg/l 48hr Daphnia magna Seaweeds : No data available

B. PERSISTENCE AND DEGRADABILITY

1) ETHYLENE GLYCOL	Persistence : No data available Degradability : No data available
2) Water	Persistence : log Kow - 1.38 Degradability : No data available
3) SEBACIC ACID	Persistence : log Kow 2.19 Degradability : No data available

C. BIO ACCCUMULATION

1) ETHYLENE GLYCOL	Accumulation : No data available
2) WATER	Accumulation : No data available

3) SEBACIC ACID	Accumulation : No data available
4) BUSINESS SECRET(S1)	Accumulation : No data available
D. OZONE LAYER HAZARD	Not applicable
E. MOBILITY IN SOIL	No data available
F. OTHER INFORMATION	No data available

13. DISPOSAL CONSIDERATIONS

A. DISPOSAL METHODS	Dispose in accordance with all applicable regulations
B. Disposal instruction	No data available
C. Waste code	No data available

14. TRANSPORT INFORMATION

A. U.N. NUMBER	ADR/RID: - IMDG: - IATA: -
B. U.N. PROPER SHIPPING NAME	ADR/RID : Not regulated as dangerous goods IMDG : Not regulated as dangerous goods IATA : Not regulated as dangerous goods
C. TRANSPORT HAZARD CLASS(ES)	ADR/RID: - IMDG: - IATA: -
D. ENVIRONMENTAL HAZARDS	ADR/RID: - IMDG: - IATA: -
E. SPECIAL PRECAUTIONS FOR USER	No data available
F. TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL73/78 AND THE IBC CODE	No data available

15. REGULATORY INFORMATION

A. REGULATION	
1) ETHYLENE GLYCOL	
E.U	Hazard symbols : Acute Tox. 4 * Risk phrases : H302 Safety phrases : No
U.S	OSHA regulation (29 CFR1910.119) : No CERCLA 103 regulation(40 CFR 302.4) : 2267.95kg 5000lb EPCRA 302 regulation(40 CFR355.30) : No EPCRA 304 regulation(40 CFR355.40) : No EPCRA 313 regulation(40 CFR372.65) : Yes US. Toxic Substances Control Act : Listed CEPA - Domestic Substances List (DSL) : Listed
2) WATER	
E.U	Hazard symbols : No Risk phrases : No Safety phrases : No
U.S	OSHA regulation (29 CFR1910.119) : No CERCLA 103 regulation(40 CFR 302.4) : No EPCRA 302 regulation(40 CFR355.30) : No EPCRA 304 regulation(40 CFR355.40) : No EPCRA 313 regulation(40 CFR372.65) : No US. Toxic Substances Control Act : Listed CEPA - Domestic Substances List (DSL) : Listed
3) Sebacic Acid	
E.U	Hazard symbols : No

U.S

Risk phrases : No
Safety phrases : No
OSHA regulation (29 CFR1910.119) : No
CERCLA 103 regulation(40 CFR 302.4) : No
EPCRA 302 regulation(40 CFR355.30) : No
EPCRA 304 regulation(40 CFR355.40) : No
EPCRA 313 regulation(40 CFR372.65) : No
US. Toxic Substances Control Act : Listed
CEPA - Domestic Substances List (DSL) : Listed

4) BUSINESS SECRET(S1)
E.U

Hazard symbols : No
Risk phrases : No
Safety phrases : No

U.S

OSHA regulation (29 CFR1910.119) : No
CERCLA 103 regulation(40 CFR 302.4) : No
EPCRA 302 regulation(40 CFR355.30) : No
EPCRA 304 regulation(40 CFR355.40) : No
EPCRA 313 regulation(40 CFR372.65) : No
US. Toxic Substances Control Act : Listed
CEPA - Domestic Substances List (DSL) : Listed

16. OTHER INFORMATION

MSDS Version Number	1.1
MSDS Effective Date	01.11.2022
MSDS Revisions	A vertical bar (i) in the left margin indicates and amendment from the previous version
MSDS Distributions	The information in this document should be made available to all who may handle the product
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