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## I. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### 1. TRADE NAME : PG USP(Propylene Glycol USP)

- o CAS NUMBER : 57-55-6
- o RTECS NUMBER : TY2000000
- o SUBSTANCE/ SYNONYMS : 1,2-Propanediol; 1,2-Dihydroxypropane;  
2-Hydroxypropanol; Isopropylene Glycol; Methylethylene Glycol; Methylethyl Glycol; Monopropylene Glycol; 2,3-Propanediol; Alpha-Propylene Glycol; 1,2-Propylene Glycol
- o FORMULA :  $\text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{OH}$
- o CHEMICAL FAMILY : Glycol

### 2. COMPANY : SKC Co., Ltd.

55, GOSA-DONG, NAM-GU, ULSAN CITY, KOREA  
TEL. 82-52-278-5511 ~ 15

### 3. CREATION DATE : MAY 01 1996

### 4. REVISION DATE : JAN. 01, 2006 Rev. No. : 3

## II. COMPOSITION, INFORMATION ON INGREDIENTS

<u>COMPONENT NAME</u>	<u>CAS NO.</u>	<u>COMPOSITION AMOUNT(%)</u>
Propylene Glycol	57-55-6	GT 99.9
Dipropylene Glycol, Others	-	LT 0.01

## III. HAZARDS IDENTIFICATION

### 1. EMERGENCY OVERVIEW :

- o NFPA RATINGS (SCALE 0-4): HEALTH=0 FIRE=1 REACTIVITY=0

Odorless, clear, colorless, hygroscopic, viscous liquid with a slightly acid taste. Avoid contact with eyes. Keep container tightly closed. Wash thoroughly after handling. Handle with caution.

### 2. POTENTIAL HEALTH EFFECTS:

- o INHALATION :

SHORT TERM EFFECTS : No information available on significant adverse effects.

LONG TERM EFFECTS : No information available on significant adverse effects.



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o SKIN CONTACT :

SHORT TERM EFFECTS : No information available on significant adverse effects.

LONG TERM EFFECTS : No information available on significant adverse effects.

o EYE CONTACT :

SHORT TERM EFFECTS : May cause minor eye irritation.

LONG TERM EFFECTS : No information is available.

o INGESTION:

SHORT TERM EFFECTS : No information available on significant adverse effects.

LONG TERM EFFECTS : No information available on significant adverse effects.

3. CARCINOGEN STATUS :

OSHA : N      NTP : N      IARC : N

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## IV. FIRST AID MEASURES

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1. INHALATION :

FIRST AID- No expected to present a significant inhalation hazard under anticipated conditions of normal use.

2. SKIN CONTACT :

FIRST AID- Remove contaminated clothing and shoes. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes).

3. EYE CONTACT :

FIRST AID- Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains (at least 15-20 minutes). Get medical attention immediately.

4. INGESTION :

FIRST AID- Treat symptomatically and supportively.

5. NOTE TO PHYSICIAN

o ANTIDOTE:

No specific antidote. Treat symptomatically and supportively.

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## V. FIRE FIGHTING MEASURES

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1. FIRE AND EXPLOSION HAZARD :

Slight fire hazard when exposed to heat or flame. Heat from fire can generate flammable vapor. When mixed with air and exposed to ignition source, vapor can burn in open or explode if confined. Vapors may travel long distances along the ground before igniting and flashing back to vapor source. Fine sprays/mists may be combustible at temperatures below normal flash point. Aqueous solutions containing less than 95% propylene glycol by weight have no flash point as obtained by standard test methods. However aqueous



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solutions of propylene glycol greater than 22% by weight, if heated sufficiently, will produce flammable vapor. Only aqueous solutions of propylene glycol less than 22% should be used in sprinkler systems or other fire-fighting equipment. Always drain and flush systems containing propylene glycol with water before welding or other maintenance.

### 2. EXTINGUISHING MEDIA :

Dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For larger fires, use water spray, fog or alcohol-resistant foam. Alcohol foam.

### 3. FIREFIGHTING :

Move container from fire area if you can do it without risk. Do not enter fire area without proper protection. Fight fire from a safe distance/protected location. Heat may build enough pressure to rupture closed containers/spreading fire/increasing risk of burns/injuries. Use water spray/fog for cooling. Avoid frothing/steam explosion. Do not scatter spilled material with high-pressure water streams. Burning liquid may float on water. Although water soluble, may not be practical to extinguish fire by water dilution. Dike fire-control water for later disposal. Avoid breathing hazardous vapors, keep upwind. Notify authorities immediately if liquid enters sewer/public waters.

4. FLASH POINT : 210 F (99 C) (CC)

5. LOWER FLAMMABLE LIMIT : 2.4%

UPPER FLAMMABLE LIMIT : 17.4%

6. AUTOIGNITION : 700 F (371 C)

7. FLAMMABILITY CLASS(OSHA): IIIB

### 8. HAZARDOUS COMBUSTION PRODUCTS :

Thermal decomposition products may include toxic oxides of carbon.

## VI. ACCIDENTAL RELEASE MEASURES

### OCCUPATIONAL SPILL:

May contaminate water supplies/pollute public waters. Evacuate/limit access. Equip responders with proper protection. Prevent flow to sewer/public waters. Stop release. Notify fire and environmental authorities. Restrict water use for cleanup. Slippery walking. Spread granular cover. Impound/recover large land spill. Soak up small spills with inert solids. Use suitable disposal containers. On water, material is soluble and may float or sink. May biodegrade. Contain /collect rapidly to minimize dispersion. Disperse residue to reduce aquatic harm. Report per regulatory requirements. Keep unnecessary people away; isolate hazard area and restrict entry.



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## VII. HANDLING AND STORAGE

Hygroscopic. Use dry nitrogen or low dew point air for tank padding. Keep drums tightly closed to prevent contamination. Store at 18~32 °C. Store away from incompatible substances.

## VIII. EXPOSURE CONTROLS, PERSONAL PROTECTION

### 1. EXPOSURE LIMITS :

No occupational exposure limits established by OSHA, ACGIH, or NIOSH.

### 2. VENTILATION :

No special ventilation is recommended under anticipated conditions of normal use beyond that needed for normal comfort control.

### 3. EYE PROTECTION :

Employee wear splash-proof or dust-resistant safety goggles to prevent eye contact with this substance.

Emergency eye wash : Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain within the immediate work area for emergency use.

### 4. SKIN PROTECTION :

Not normally considered a skin hazard. Where use can result in skin contact, practice good personal hygiene. Wash hands and other exposed areas with mild soap and water before eating, drinking, smoking, and when leaving work.

### 5. RESPIRATOR :

No special respirator protection is recommended under anticipated conditions of normal use with adequate ventilation.

## IX. PHYSICAL AND CHEMICAL PROPERTIES

1. DESCRIPTION : Clear, colorless; hygroscopic; Little or no odor; Aromatic, sweet odor
2. MOLECULAR WEIGHT : 76.11
3. MOLECULAR FORMULA : C-H3-C-H-(O-H)-C-H2-O-H
4. BOILING POINT : 370-372 F (188-189 C)
5. FREEZING POINT : -75 F (-59 C)
6. VAPOR PRESSURE : <0.1 mmHg @ 20 C
7. VAPOR DENSITY : 2.62
8. SPECIFIC GRAVITY : 1.0361



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9. WATER SOLUBILITY : soluble
10. VOLATILITY : 100%
11. PH : no data available
12. ODOR THRESHOLD : no data available
13. EVAPORATION RATE : 0.005 (butyl acetate=1)
14. VISCOSITY : 58.1 cP @ 20 C
15. SOLVENT SOLUBILITY : Soluble in alcohol, acetone, chloroform, ether, benzene many organic solvents; insoluble in fixed oils.

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## X. STABILITY AND REACTIVITY

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### 1. REACTIVITY :

Stable under normal temperatures and pressures.

### 2. CONDITIONS TO AVOID :

May burn but does not ignite readily. Avoid contact with strong oxidizers, excessive heat, sparks, or open flame.

### 3. INCOMPATIBILITIES :

- o ACID ANHYDRIDES : Incompatible.
- o ACID CHLORIDES : Incompatible.
- o CHLOROFORMATES : Incompatible.
- o METALS(LIGHT) : Reaction forms flammable hydrogen gas.
- o NITRIC ACID, HYDROFLUORIC ACID AND SILVER NITRATE :  
Mixture forms explosive silver fulminate.
- o OXIDIZERS : Fire and explosion hazard.
- o PLASTICS : May be attacked.
- o REDUCING AGENTS : Incompatible.
- o ACETALDEHYDE : Violent condensation reaction.
- o BARIUM PERCHLORATE : Formation of highly explosive perchloric ester on refluxing.
- o CHLORINE : Formation of highly explosive alkyl hypochlorites.
- o DIETHYL ALUMINUM BROMIDE : Spontaneous ignition.
- o ETHYLENE OXIDE : Possible explosion.
- o HEXAMETHYLENE DIISOCYANATE : Possible explosion in absence of solvent.
- o HYDROGEN PEROXIDE + SULFURIC ACID : Possible explosion.
- o HYPOCHLOROUS ACID : Formation of highly explosive alkyl hypochlorites.
- o ISOCYANATES : Possible explosion in absence of solvent.
- o LITHIUM ALUMINUM HYDRIDE : Vigorous reaction.



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- o NITROGEN TETROXIDE : Possible explosion.
- o PERCHLORIC ACID (HOT) : Dangerous interaction.
- o PERMONOSULFURIC ACID : Possible explosion on contact with primary or secondary alcohols.
- o TRI-ISO-BUTYL ALUMINUM : Violent reaction.

#### 4. HAZARDOUS DECOMPOSITION :

Thermal decomposition products may include toxic oxides of carbon.

#### 5. POLYMERIZATION :

Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

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## XI. TOXICOLOGICAL INFORMATION

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#### 1. PROPYLENE GLYCOL:

o IRRITATION DATA : 500 mg/7 days skin-human mild; 104 mg/3 days intermittent skin-human moderate; 10%/2 days skin-man; 100 mg eye-rabbit mild; 500 mg/24 hours eye-rabbit mild.

o TOXICITY DATA : 20,800 mg/kg skin-rabbit LD50; 22 gm/kg oral-mouse LD50; 18,500 mg/kg oral-rabbit LD50; 6300 mg/kg intramuscular-rabbit LDLo; 10 gm/kg/3 days continuous parenteral-infant TDLo; 2180 mg/m<sup>3</sup>/6 hours/90 days intermittent inhalation-rat TCLo

2. CARCINOGEN STATUS : None.

3. ACUTE TOXICITY LEVEL : Relatively non-toxic by dermal absorption and ingestion.

4. TARGET EFFECTS : No data available.

5. AT INCREASED RISK FROM EXPOSURE : No data available.

6. ADDITIONAL DATA : No data available.

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## XII. ECOLOGICAL INFORMATION

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1. ENVIRONMENTAL IMPACT RATING (0-4) : No data available

2. ACUTE AQUATIC TOXICITY : No data available

3. DEGRADABILITY : No data available

4. LOG BIOCONCENTRATION FACTOR (BCF) : No data available

5. LOG OCTANOL/WATER PARTITION COEFFICIENT : No data available



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### XIII. DISPOSAL CONSIDERATIONS

Contaminated product, soil, or water should not be designated hazardous waste. Landfill solids at permitted sites. Use registered transports. Burn concentrated liquids, diluting with clean, low viscosity fuel. Avoid flame-outs. Assure emissions comply with applicable regulations. Dilute aqueous waste may biodegrade. Avoid overloading/poisoning plant biomass. Assure effluent complies with applicable regulations.

### XIV. TRANSPORT INFORMATION

No classification currently assigned.

### XV. REGULATORY INFORMATION

- o TSCA INVENTORY STATUS : Y
- o CERCLA SECTION 103 (40CFR302.4) : N
- o SARA SECTION 302 (40CFR355.30) : N
- o SARA SECTION 304 (40CFR355.40) : N
- o SARA SECTION 313 (40CFR372.65) : N
- o OSHA PROCESS SAFETY (29CFR1910.119) : N
- o CALIFORNIA PROPOSITION 65 : N
- o SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40 CFR 370.21)
  - ACUTE HAZARD : N
  - CHRONIC HAZARD : N
  - FIRE HAZARD : N
  - REACTIVITY HAZARD : N
  - SUDDEN RELEASE HAZARD : N

### XVI. OTHER INFORMATION