



# Propylene Glycol USP

for Food Applications





# PG USP

## Product characteristics

- Produced by propylene oxide with purified water and no solvents, or additives
- A viscous, clear liquid with a weak characteristic odor
- Relatively non-toxic, hygroscopic liquid and antimicrobial properties
- Soluble in water and various organic compounds
- Safe for pharmaceutical use under FDA 21 CFR 184.1666
- Produce under the KFDA approval

SK picglobal PG USP is a high-purity (over 99.8%) product and can be applied to additives and functional raw materials



## Quality

SK picglobal PG USP meets global standards and regulations as below

- United States Pharmacopeia (USP)
- FCC (Food Chemicals Codex)
- FDA 21 CFR 582.1666, EU no 767/2009 and 68/2013 Animal food (except cats)
- FSSC 22000 Certification
- EU Regulation (EC) 1333/2008, E-1520
- Kosher & Halal-certified

SK picglobal is continuously improving our quality management system to provide our customers with the best quality, stability, and reliability.

## Applications

PG USP offers excellent moisturizing properties and long-lasting flavor for food.

It can be also used for extracting a specific food component and direct/indirect food applications

- Flavor : Extractors, solvents, preservatives
- Additives : Antioxidants, emulsifiers, stabilizers
- Food processing : Processing aid, heat transfer fluid
- Animal feed : Additives and emulsifiers (except in cat)

## Safety

WHO FOOD ADDITIVES SERIES NO. 5

- The amount of PG humans can consume per day is 25mg/kg \* weight(kg)
- No adverse effects of PG were observed in reproductive and developmental toxicity studies

According to Regulation (EC) No 1272/2008

- PG is classified as a safe substance ECHA (European Chemicals Agency) decided
- PG does not cause respiratory irritation

REACH Registration No : 01-2119456809-23-0014



### Safety, Health and Environment

PG USP is safe, but when handling,

- Do not touch the eyes directly
- Wear protective equipment
- Work in a well-ventilated place
- If it comes into contact with hands or any part of the body, wipe with running water



If spilled,

- Wash with soap
- Wipe off with a hygroscopic tissue or cloth
- Don't worry, it will be degraded by bacteria



### Transport and storage

For safe transportation and stable quality,

- Strategically located terminal facilities
- Storage with nitrogen purged : no contact with air or moisture

PG USP is packaged and transported as

- ISO & Flexitanks, IBC bags, coated steel, and plastic drums (HDPE)

PG USP storage requirements

- In a single-stage load at 40 degrees or less
- No direct sunlight or UV
- After opening, keep the lid closed
- When storing in a tank, nitrogen padding is recommended

### Technical data

| Item                    | Test method                 | Unit       | Data   |
|-------------------------|-----------------------------|------------|--|
| Chemical name           |                             |            | 1,2-Propanediol                              |
| Formula                 |                             |            | C <sub>3</sub> H <sub>8</sub> O <sub>2</sub> |
| Molecular weight        |                             | g/mol      | 76.10  |
| CAS No.                 |                             |            | 57-55-6                                      |
| EC(EINECS) No.          |                             |            | 200-338-0                                    |
| Surface tension         | 25°C                        | ISO 304    | mN/m 36                                      |
| Refractive index        | 20°C                        | ASTM D1218 | 1.4310-1.4330                                |
| Viscosity               | 25°C<br>60°C                | ASTM D2849 | mPas (cPs) 48.6<br>8.4                       |
| Specific gravity        | 20/20°C<br>25/4°C<br>60/4°C | ASTM D4052 | 1.038<br>1.033<br>1.007                      |
| Vapor pressure          | 20°C<br>25°C                | ASTM D5482 | kPa 0.011<br>0.017                           |
| Specific heat           | 25°C                        | ASTM E202  | J/g·K 2.51                                   |
| Heat of formation       |                             | ASTM D240  | kJ/mol -422                                  |
| Heat of vaporization    | 25°C                        | ASTM E1719 | kJ/mol 67.0                                  |
| Flash point             | Open cup                    | PMCC       | °C 104                                       |
| Autoignition temp       |                             | ASTM E659  | °C 371                                       |
| Distillation range      | 1 atm                       | ASTM D1078 | °C 186-189                                   |
| Freezing point          |                             | ASTM D2386 | °C -59                                       |
| Pour point              |                             | ASTM D97   | °C -57                                       |
| Thermal conductivity    | 25°C                        | ASTM D2717 | W/m·K 0.2061                                 |
| Electrical conductivity | 25°C                        | ASTM D4308 | micro S/m 10                                 |

### Maximum allowance

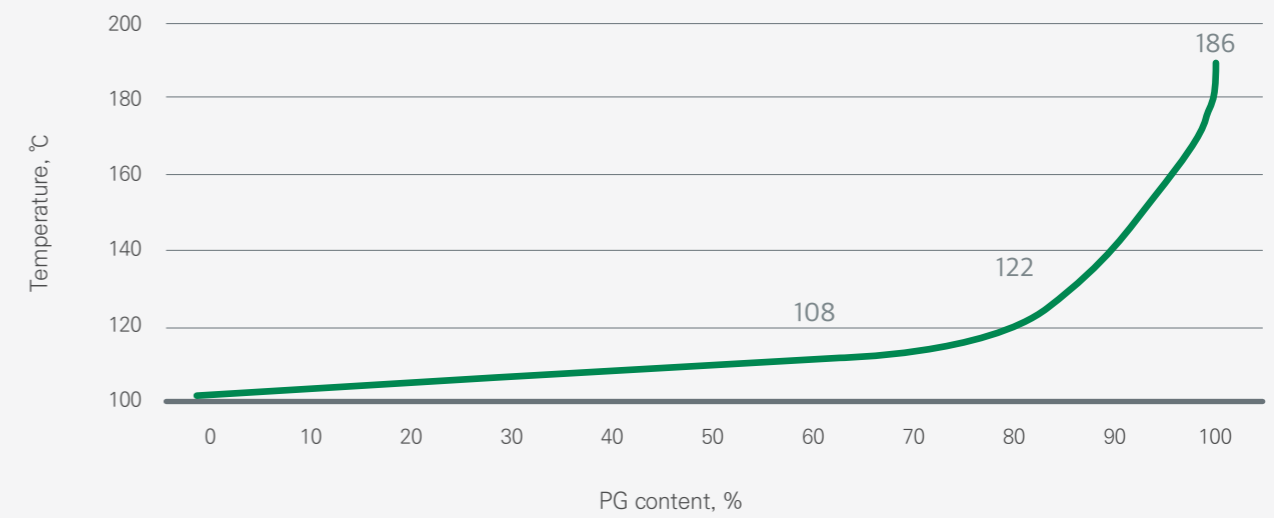
| Category                  | Maximum levels (%) |
|---------------------------|--------------------|
| Alcoholic beverages       | 5                  |
| Confections and frostings | 24                 |
| Frozen dairy products     | 2.5                |
| Seasonings and flavorings | 97                 |
| Nuts and nut products     | 5                  |
| All other food categories | 2                  |

### Nutrient contents

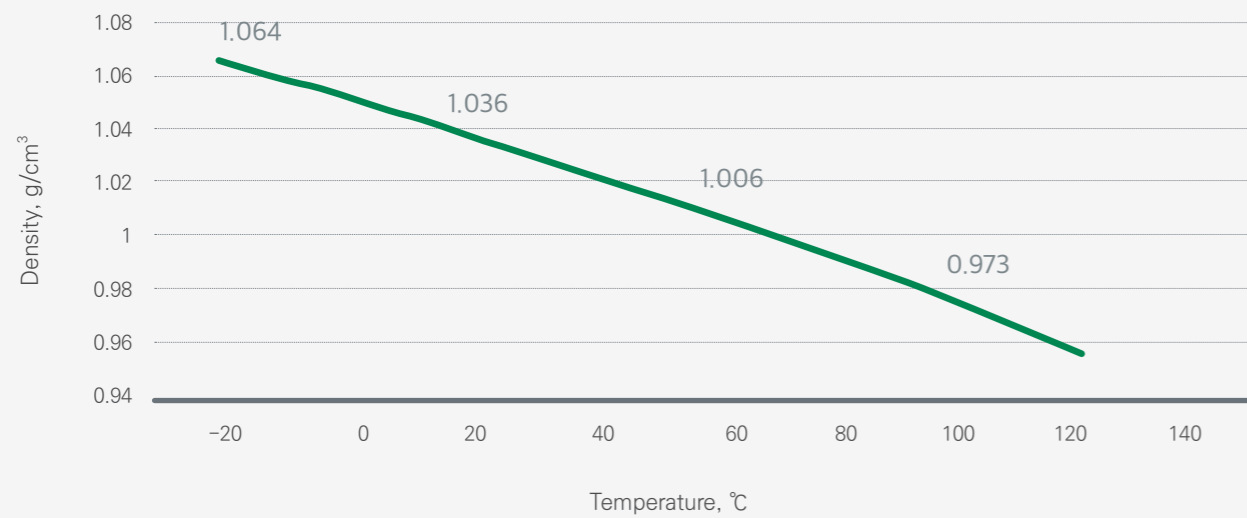
| 100 g basis      |       |
|------------------|-------|
| Calories         | 400   |
| Water (g)        | 0.2   |
| Ash (g)          | 0.005 |
| Fat (g)          | 0     |
| Protein (g)      | 0     |
| Carbohydrate (g) | 100   |
| Cholesterol (g)  | 0     |

\* Data from FDA 21 CFR 170.3

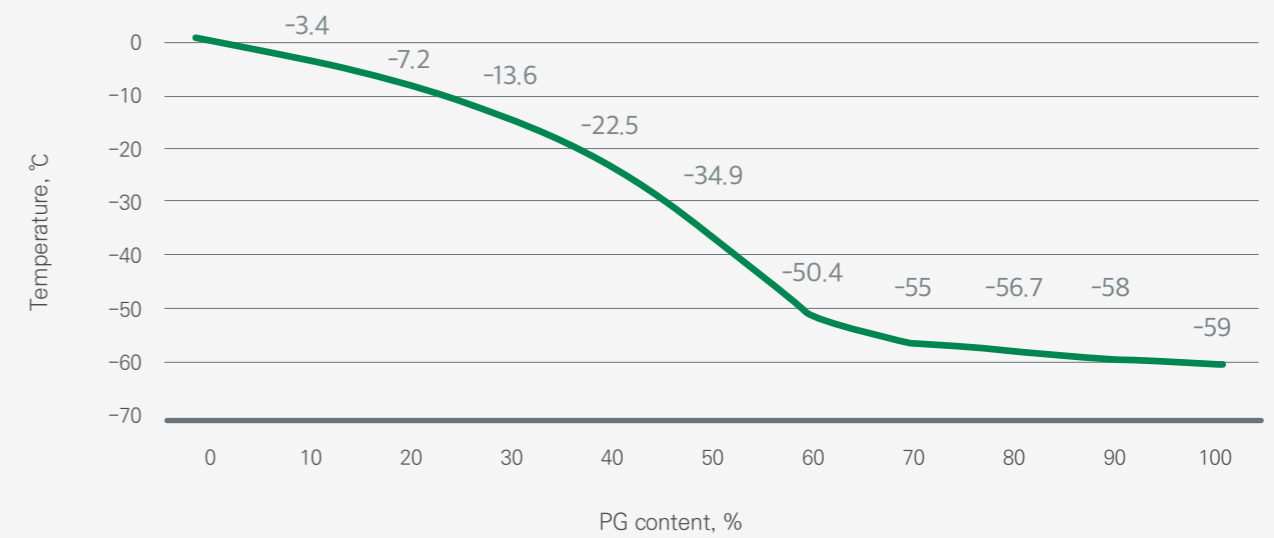
### Boiling point



### Density by temperature



### Freezing point





Additional information is available from your SK picglobal representative, our website, or by calling

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South Korea – Ulsan Factory ☎ 82-52-278-5721 📠 82-52-275-5157

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