SECTION 1. IDENTIFICATION

Identification of the company: Clariant Corporation
4000 Monroe Road
Charlotte, NC, 28205
Telephone No.: +1 704 331 7000

Information of the substance/preparation:
BU ICS
Product Stewardship 1-704-331-7710
Emergency tel. number: +1 800-424-9300 CHEMTREC

Trade name: Safewing MP IV Launch
Material number: 233876

Primary product use: Aircraft de-icing
Chemical family: polymer-thickened deicer based on propylene glycol, corrosion inhibitors, surfactants and water - green coloured.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
Not a hazardous substance or mixture.

GHS Label element
Not a hazardous substance or mixture.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene Glycol</td>
<td>57-55-6</td>
<td>60 - 100</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

SECTION 4. FIRST AID MEASURES

If inhaled: Move the victim to fresh air. Give oxygen or artificial respiration if needed. Get immediate medical advice/attention. Never give anything by mouth to an unconscious person.

In case of skin contact: Wash thoroughly with soap and water for 15 minutes. If skin irritation occurs, seek medical attention.
In case of eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention immediately if irritation develops and persists.

If swallowed: Get medical attention immediately.

Most important symptoms and effects, both acute and delayed: The possible symptoms known are those derived from the labelling (see section 2). No additional symptoms are known.

Notes to physician: None known.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media: High volume water jet

Specific hazards during firefighting: In case of fires, hazardous combustion gases are formed: Carbon monoxide (CO)

Further information: Wear full protective clothing and self-contained breathing apparatus.

Special protective equipment for firefighters: Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Contain spill. Ensure adequate ventilation and wear appropriate personal protective equipment. Collect onto inert absorbent. Place in sealable container. Do not allow to contaminate water sources or sewers.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling: Wash thoroughly after handling. Keep container closed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type</th>
<th>Control</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

Safewing MP IV Launch

Substance key: 000000344932  Revision Date: 12/09/2015
Version: 6 - 0 / USA  Date of printing: 12/09/2015

<table>
<thead>
<tr>
<th>Substance</th>
<th>Form of exposure</th>
<th>Parameters / Permissible concentration</th>
<th>Date of printing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene Glycol</td>
<td>57-55-6</td>
<td>TWA 10 mg/m3 US WEEL</td>
<td>12/09/2015</td>
</tr>
</tbody>
</table>

**Personal protective equipment**

**Respiratory protection**: If airborne concentrations pose a health hazard, become irritating, or exceed recommended limits, use a NIOSH approved respirator in accordance with OSHA respiratory protection requirements under 29CFR1910.134.

**Hand protection**
- **Remarks**: Butyl Rubber, PVC Or Neoprene.

**Eye protection**: Safety glasses with side-shields

**Skin and body protection**: Wear suitable protective equipment.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance**: viscous liquid

**Colour**: green

**Odour**: slightly perceptible

**Odour Threshold**: not determined

**pH**: 7 - 7.5

Method: DIN 19261
Determined in the undiluted form

**Melting point**: -35 °C

Method: ASTM D 2386

**Boiling point**: 103 °C

Method: ASTM D 1120

**Flash point**: > 100 °C

Method: ASTM D 92 (closed cup)

**Evaporation rate**: not determined

**Flammability (solid, gas)**: Not applicable

**Upper explosion limit**: Not applicable

**Lower explosion limit**: Not applicable

**Vapour pressure**: not determined
Relative vapour density : not determined
Density : 1.043 g/cm³ (20 °C)
Bulk density : not determined
Solubility(ies)
  Water solubility : soluble
Partition coefficient: n-octanol/water : Not applicable
Auto-ignition temperature : > 400 °C
  Method: DIN 51794
Decomposition temperature : > 400 °C
  Method: DIN 51794
Viscosity
  Viscosity, dynamic : approx. 10,000 - 20,000 mPa.s (20 °C)
    Method: ASTM D 2196
  Viscosity, kinematic : not determined

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.
Chemical stability : Stable
Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.
  Stable
Conditions to avoid : None known.
Hazardous decomposition products : No decomposition if stored and applied as directed.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
None known.

Acute toxicity

Product:
Acute oral toxicity : Remarks: The product has not been tested. The information is derived from the properties of the individual components.
  Acute toxicity estimate: > 5,000 mg/kg
    Method: Calculation method
Components:
Propylene Glycol:
Acute oral toxicity: LD50 (Rat, male and female): 22,000 mg/kg
  Method: Other
  GLP: no

Acute inhalation toxicity: LC50 (Rabbit): > 317.042 mg/l
  Exposure time: 2 h
  Method: Other
  GLP: no

Acute dermal toxicity: LD50 (Rabbit): > 2,000 mg/kg
  Method: Other
  GLP: no

Skin corrosion/irritation

Product:
Remarks: The product has not been tested. The information is derived from the properties of the individual components.

Components:
Propylene Glycol:
Species: Rabbit
Exposure time: 4 h
Method: OECD Test Guideline 404
Result: No skin irritation
GLP: No information available.

Serious eye damage/eye irritation

Product:
Remarks: The product has not been tested. The information is derived from the properties of the individual components.

Components:
Propylene Glycol:
Species: rabbit eye
Result: non-irritant
Method: OECD Test Guideline 405
GLP: No information available.

Respiratory or skin sensitisation

Product:
Remarks: not tested.

Components:
**Propylene Glycol**
- **Test Type:** Guinea pig maximization test
- **Exposure routes:** Skin contact
- **Species:** Guinea pig
- **Method:** OECD Test Guideline 406
- **Result:** Does not cause skin sensitisation.
- **GLP:** No information available.

Test Type: Mouse local lymphnode assay
- **Exposure routes:** Skin contact
- **Species:** Mouse
- **Method:** OECD Test Guideline 429
- **Result:** Does not cause skin sensitisation.
- **GLP:** No information available.

**Germ cell mutagenicity**

**Components:**

**Propylene Glycol:**
- **Genotoxicity in vitro**
  - **Test Type:** Ames test
  - **Species:** Salmonella typhimurium
  - **Concentration:** ≤ 10 mg/plate
  - **Metabolic activation:** with
  - **Method:** Ames test
  - **Result:** negative
  - **GLP:** No information available.

- **Test Type:** Chromosome aberration test in vitro
  - **Species:** Cultured peripheral human lymphocytes
  - **Concentration:** 7.4 - 3810 µg/ml
  - **Metabolic activation:** with and without
  - **Method:** OECD Test Guideline 473
  - **Result:** negative
  - **GLP:** yes

- **Genotoxicity in vivo**
  - **Test Type:** Chromosome Aberration Test
  - **Species:** Rat (male)
  - **Strain:** Sprague-Dawley
  - **Cell type:** Bone marrow
  - **Application Route:** oral (gavage)
  - **Exposure time:** 6 - 24 - 48 h
  - **Dose:** 30 - 2500 - 5000 mg/kg
  - **Method:** Other
  - **Result:** negative
  - **GLP:** no

  **Test Type:** Chromosome Aberration Test
  - **Species:** Mouse (male)
  - **Cell type:** Erythrocyten
  - **Application Route:** Intraperitoneal injection
  - **Exposure time:** 18 h
  - **Dose:** 2500-5000-10000-15000 mg/kg
  - **Method:** Other
Result: negative
GLP: No information available.

Germ cell mutagenicity - Assessment: It is concluded that the product is not mutagenic based on evaluation of several mutagenicity tests.

Carcinogenicity

Components:
Propylene Glycol:
Carcinogenicity - Assessment: Not classifiable as a human carcinogen.

IARC: Not listed
OSHA: Not listed
NTP: Not listed

Reproductive toxicity

Components:
Propylene Glycol:
Effects on fertility:

Test Type: Two generation study
Species: Mouse
Sex: male and female
Dose: 1820 - 4800 - 10100 mg/kg
Exposure time: 126 d
CD1
Application Route: oral (gavage)
NOAEL: 10,100 mg/kg,
F1: 10,100 mg/kg,
F2: 10,100 mg/kg,
Method: Other
GLP: No information available.

Effects on foetal development:

Species: Mouse
Application Route: oral (gavage)
Exposure time: gestation day 6-15
Dose: 52 - 520 - 10400 mg/kg
Group: yes
10,400 mg/kg
52 mg/kg
Number of exposures: daily
Method: OECD Test Guideline 414
GLP: yes

Reproductive toxicity - Assessment: No reproductive toxicity to be expected.
No teratogenic effects to be expected.
STOT - single exposure

Components:
Propylene Glycol:
Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Components:
Propylene Glycol:
Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Components:
Propylene Glycol:
Species: Rat, male and female
NOAEL: 1,700 - 2,100 mg/kg
Application Route: oral (feed)
Exposure time: 2 a
Number of exposures: daily
Dose: 200-2100 mg/kg
Group: yes
Method: Other
GLP: no

Species: Cat, male
NOAEL: 443 mg/kg
Application Route: oral (feed)
Exposure time: 69 - 94 d
Number of exposures: daily
Dose: 80 - 4239 mg/kg
Group: yes
Method: Other
GLP: no

Species: Rat, male and female
NOAEL: 1 - 2.2 mg/l
Application Route: Inhalation
Exposure time: 90 d
Number of exposures: 6 hours/day, 5 days/week
Dose: 0.16 - 1.01 - 2.18 mg/l
Group: yes
Method: Other
GLP: No information available.

Species: Mouse, female
No observed adverse effect level: 0.02
Application Route: Skin contact
Exposure time: Lifespan
Number of exposures: 2x / w
Dose: 10-50-100% / 0.02 ml acetone  
Group: yes 
Method: Other  
GLP: no 
Remarks: No pathological findings 

Aspiration toxicity

Components:

Propylene Glycol: 
No aspiration toxicity classification

Experience with human exposure

Product:

General Information: The possible symptoms known are those derived from the labelling (see section 2).

Further information

Product:

Remarks: The classification was made by the conventional (calculation) method of the CLP Regulation (EC) No 1272/2008.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): 2,443 mg/l  
Exposure time: 96 h  
Method: OPPTS 850.1075

LC50 (Pimephales promelas (fathead minnow)): 2,443 mg/l  
Exposure time: 96 h  
Method: OPPTS 850.1075

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna Straus): 976 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae: EC50 (Green algae - fresh water (Pseudokirchneriella subcapitata)): 2,228 mg/l  
Exposure time: 96 h  
Method: EPA OPPTS 850.5400 Algal toxicity, tiers I and II (1996)

Toxicity to bacteria: EC50: 5,200 mg/l  
Exposure time: 30 min  
Method: ISO 11348-2
Components:

Propylene Glycol:

Toxicity to fish

LC50 (Oncorhynchus mykiss (rainbow trout)): 40,613 mg/l
Exposure time: 96 h
Test Type: static test
Analytical monitoring: yes
Method: Other
GLP: no

Toxicity to daphnia and other aquatic invertebrates

LC50 (Mysisidopsis bahia (opossum shrimp)): 18,800 mg/l
Exposure time: 96 h
Test Type: static test
Analytical monitoring: yes
Method: Other
GLP: yes

Toxicity to algae

EC50 (Pseudokirchneriella subcapitata (green algae)): 19,000 mg/l
End point: Growth rate
Exposure time: 96 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

NOEC (Pseudokirchneriella subcapitata (green algae)):
15,000 mg/l
End point: Growth rate
Exposure time: 14 d
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

Toxicity to fish (Chronic toxicity)

Chronic Toxicity Value (Fish): 2,500 mg/l
Exposure time: 30 d
End point: Other
Method: Other
GLP: no

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

NOEC (Ceriodaphnia spec.): 13,020 mg/l
Exposure time: 7 d
End point: Reproduction rate
Test Type: semi-static test
Analytical monitoring: yes
Method: Other
GLP: No information available.

Toxicity to bacteria

NOEC (Pseudomonas putida): > 20,000 mg/l
End point: Growth rate
Exposure time: 18 h
Test Type: aquatic
Analytical monitoring: no
Method: Other
GLP: no
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to soil dwelling organisms: Remarks: The study is not necessary from a scientific perspective.

Plant toxicity: Remarks: The study is not necessary from a scientific perspective.

Sediment toxicity: Remarks: The study is not necessary from a scientific perspective.

Toxicity to terrestrial organisms: Remarks: The study is not necessary from a scientific perspective.

Persistence and degradability

Product:

Biodegradability: Biodegradation: 98%
Exposure time: 7 d
Method: OECD Test Guideline 301E

Biochemical Oxygen Demand (BOD): 0.34 kg/kg
Method: DIN/EN 1899-1

Chemical Oxygen Demand (COD): 0.85 kg/kg
Method: DIN ISO 15705-H45

Dissolved organic carbon (DOC): 0.24 kg/kg
Method: DIN/EN 1484

Components:

Propylene Glycol:

Biodegradability: aerobic
Inoculum: activated sludge, domestic
Concentration: 100 mg/l ThOD
BOD in % of theoretical OD
Result: Readily biodegradable
Biodegradation: 100%
Exposure time: 28 d
Method: OECD Test Guideline 301F
GLP: yes

aerobic
Inoculum: activated sludge, domestic
Concentration: 50.3 mg/l
CO2 formation in % of theoretical value
Result: Readily biodegradable
Biodegradation: 90.6%
Exposure time: 64 d
Bioaccumulative potential

Components:
Propylene Glycol:
Bioaccumulation: Bioconcentration factor (BCF): 0.09
Method: calculated
GLP: no

Mobility in soil

Components:
Propylene Glycol:
Distribution among environmental compartments: Adsorption/Soil
Medium: water - soil
log Koc: 0.46
Method: other (calculated)

Other adverse effects

Product:
Additional ecological information: Biologically degradable, when diluted may be degraded in biological purification plants

Components:
Propylene Glycol:
Environmental fate and pathways: not available

Results of PBT and vPvB assessment: This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

Additional ecological information: Do not allow to enter ground water, waterways or waste water.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues: Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.

SECTION 14. TRANSPORT INFORMATION
SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act
CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This product is not subject to SARA Title III Section 313 reporting requirements under 40 CFR 372.

Clean Water Act
Contains no known priority pollutants at concentrations greater than 0.1%.

The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory

Inventories
AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information
This information is supplied under the OSHA Hazard Communication Standard, 29 CFR 1910.1200, and is offered in good faith based on data available to us that we believe to be true and accurate. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable to the material. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate for that use. No warranty, express or implied, is made regarding the accuracy of this data, the hazards connected with the use of the material, or the results to be obtained from the use thereof. We assume no responsibility for damage or injury from the use of the product described herein. Data provided here are typical and not intended for use as product specifications.

US / EN