

Safewing MP I LFD 88

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Version: 1 - 0 / USA	Date of printing :01/15/2018

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 Industrial & Consumer Specialties Product Stewardship, +1-704-331-7710

Emergency tel. number: +1 800-424-9300(CHEMTREC)

Trade name: Safewing MP I LFD 88

Material number: 304580

Primary product use: Aircraft de-icing

Chemical family: Aqueous solution of corrosion inhibitors and surface active agents in

propylene glycol

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Substance name : Aqueous solution of corrosion inhibitors and surface active

agents in propylene glycol

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Propylene Glycol	57-55-6	70 - 90

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

SECTION 4. FIRST AID MEASURES

General advice : Remove/Take off immediately all contaminated clothing.

Get medical advice/ attention if you feel unwell.

If inhaled : Move the victim to fresh air.



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Give oxygen or artificial respiration if needed. Get immediate medical advice/ attention.

In case of skin contact : Remove contaminated clothing and shoes.

Wash off with soap and plenty of water.

Wash off immediately with plenty of water for at least 15

minutes.

Get medical attention if irritation develops and persists.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids,

for at least 15 minutes.

Get immediate medical advice/ attention.

If swallowed : Rinse mouth.

Do NOT induce vomiting.

Never give anything by mouth to an unconscious person.

Get medical advice/ attention.

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 : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray jet

Alcohol-resistant foam

Dry powder

Carbon dioxide (CO2)

Unsuitable extinguishing

media

High volume water jet

Specific hazards during

firefighting

In case of fires, hazardous combustion gases are formed:

Carbon monoxide (CO) Carbon dioxide (CO2) Sulphur dioxide (SO2)

Further information : In the event of fire and/or explosion do not breathe fumes.

Do not allow run-off from fire fighting to enter drains or water

courses.

Fire residues and contaminated fire extinguishing water must

be disposed of in accordance with local regulations.

Special protective equipment :

for firefighters

Wear an approved positive pressure self-contained breathing

apparatus in addition to standard fire fighting gear.



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Personal precautions, protective equipment and emergency procedures Refer to protective measures listed in sections 7 and 8.

Avoid contact with skin, eyes and clothing.

Wash thoroughly after handling.

Environmental precautions : The product should not be allowed to enter drains, water

courses or the soil.

Methods and materials for containment and cleaning up

Prevent product from entering drains. Non-sparking tools should be used.

Take measures to prevent the build up of electrostatic charge. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local /

national regulations (see section 13). Clean contaminated surface thoroughly.

SECTION 7. HANDLING AND STORAGE

Advice on protection against

fire and explosion

Observe the general rules of industrial fire protection

Advice on safe handling : Handle in accordance with good industrial hygiene and safety

practice.

For personal protection see section 8. Avoid contact with skin, eyes and clothing.

Use only with adequate ventilation.

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. Keep away from heat, sparks and open flames. Store in proper container and keep container closed when not in use.

Technical

Keep containers tightly closed in a cool, well-ventilated place.

measures/Precautions

Handle and open container with care.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Propylene Glycol	57-55-6	TWA	10 mg/m3	US WEEL

Engineering measures

Use engineering controls such as local or general exhaust to maintain airborne concentrations below exposure limits.

Personal protective equipment

Respiratory protection : Use respiratory protection in case of insufficient exhaust

ventilation or prolonged exposure

Hand protection

Remarks : Chemical resistant gloves (butyl rubber, nitrile rubber,



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polyvinyl alcohol). However, please note that PVA degrades

in water.

Eye protection : Chemical splash goggles with face shield.

Skin and body protection : Wear suitable protective equipment.

Protective measures : Observe the usual precautions for handling chemicals.

Avoid contact with skin and eyes.

Hygiene measures : Wash hands before breaks and at the end of workday.

Use protective skin cream before handling the product. Take off immediately all contaminated clothing and wash it

before reuse.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid

Colour : orange

Odour : characteristic

Odour Threshold : no data available

pH : ca. 7.5 (20 °C)

pour point : <-50 °C

Boiling point : 125 °C

Flash point : ca. 100 °C

Evaporation rate : not determined

Flammability (solid, gas) : Not applicable

Self-ignition : no data available

Upper explosion limit : no data available

Lower explosion limit : no data available

Vapour pressure : no data available

Relative vapour density : no data available

Relative density : no data available

Density : ca. 1.042 g/cm3 (25 °C)



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ca. 1.107 g/cm3 (40 °C)

Bulk density : no data available

Solubility(ies)

Water solubility : completely soluble

Partition coefficient: n-

octanol/water

: Not applicable

Auto-ignition temperature : no data available

Decomposition temperature : no data available

Viscosity

Viscosity, dynamic : ca. 39 mPa.s (15 °C)

ca. 22 mPa.s (25 °C)

Viscosity, kinematic : no data available

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

The product does not contain organic peroxide-groups which result from either the manufacturing process or from added

ingredients.

Metal corrosion rate : Not corrosive to metals

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.

Chemical stability : Stable under normal conditions.

Possibility of hazardous

reactions

No dangerous reaction known under conditions of normal use.

Stable

Conditions to avoid : None known.

Incompatible materials : not known

Hazardous decomposition

products

: When handled and stored appropriately, no dangerous

decomposition products are known

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : Remarks: not tested.



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Acute inhalation toxicity : Remarks: not tested.

Acute dermal toxicity : Acute toxicity estimate: 2,841 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
Test atmosphere: vapour

Method: Other GLP: no

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

Method: Other GLP: no

Skin corrosion/irritation

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

Components:

Propylene Glycol:

Species: rabbit eye Result: non-irritant

Method: OECD Test Guideline 405 GLP: No information available.

Respiratory or skin sensitisation

Product:

Remarks: no data available

Components:

Propylene Glycol:

Test Type: Guinea pig maximization test

Exposure routes: Skin contact



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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

Product:

Germ cell mutagenicity -

Assessment

: No information available.

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 metabolic activation

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: Erythrocytes

Application Route: Intraperitoneal injection

Exposure time: 18 h



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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

Product:

Carcinogenicity - Assessment

No information available.

Components:

Propylene Glycol:

Carcinogenicity - Assessment

: Not classifiable as a human carcinogen.

IARC Not listed

OSHA Not listed

NTP Not listed

Reproductive toxicity

Product:

Reproductive toxicity -

Assessment

No information available.

No information available.

Components:

Propylene Glycol:

Effects on fertility : Test Type: Two-generation study

Species: Mouse, male and female

Strain: CD1

Application Route: oral (gavage) Dose: 1820 - 4800 - 10100 mg/kg

General Toxicity - Parent: NOAEL: 10,100 mg/kg body weight General Toxicity F1: NOAEL: 10,100 mg/kg body weight General Toxicity F2: NOAEL: 10,100 mg/kg body weight

Method: Other

GLP: No information available.

Effects on foetal : Species: Mouse development : Strain: CD1

Application Route: oral (gavage) Dose: 52 - 520 - 10400 mg/kg



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General Toxicity Maternal: NOAEL: 52 mg/kg body weight

Teratogenicity: NOAEL: 10,400 mg/kg body weight

Method: OECD Test Guideline 414

GLP: yes

No reproductive toxicity to be expected. Reproductive toxicity -Assessment 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

Product:

Remarks: no data available

Components:

Propylene Glycol:

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

Repeated dose toxicity

Product:

Remarks: no data available

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



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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

NOAEL: 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

Product:

no data available

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).

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish

Remarks: no data available

Toxicity to daphnia and other :

aquatic invertebrates Remarks: no data available



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Toxicity to algae

Remarks: no data available

Toxicity to microorganisms : Remarks: no data available

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 (Mysidopsis 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

End point: Other Exposure time: 30 d Method: Other GLP: no

Toxicity to daphnia and other :

aquatic invertebrates (Chronic toxicity)

NOEC (Ceriodaphnia spec.): 13,020 mg/l

End point: Reproduction rate

Exposure time: 7 d

Test Type: semi-static test Analytical monitoring: yes

Method: Other

GLP: No information available.



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Toxicity to microorganisms : 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 : Remarks: Not applicable

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

Method: OECD Test Guideline 306

GLP: yes



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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

: no data available

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

RCRA - Resource

Conservation and Recovery

Authorization Act Waste Code

hazardous waste.

: NONE

Waste from residues Small quantities may be treated in aerobic wastewater

treatment systems. Larger quantities may be incinerated or

This product, if discarded as sold, is not a Federal RCRA

landfilled after solidification in permitted systems.

Contaminated packaging Packaging that cannot be cleaned should be disposed of as

product waste



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SECTION 14. TRANSPORT INFORMATION

DOT not restrictedIATA not restrictedIMDG not restricted

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ	Calculated product RQ
		(lbs)	(lbs)
Potassium hydroxide	1310-58-3	1000	*

^{*:} Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with

known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section

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

TSCA : On TSCA Inventory

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA -



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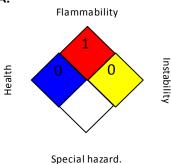
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International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China: IMDG - International Maritime Dangerous Goods: IMO -International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO -International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

NFPA:



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This information corresponds to the present state of our knowledge and is intended as a general description of our products and their possible applications. Clariant makes no warranties, express or implied, as to the information's accuracy, adequacy, sufficiency or freedom from defect and assumes no liability in connection with any use of this information. Any user of this product is responsible for determining the suitability of Clariant's products for its particular application. NO EXPRESS OR IMPLIED WARRANTY IS MADE OF THE MERCHANTABILITY, SUITABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE OF ANY PRODUCT OR SERVICE. Nothing included in this information waives any of Clariant's General Terms and Conditions of Sale, which control unless it agrees otherwise in writing. Any existing intellectual/industrial property rights must be observed. Due to possible changes in our products



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and applicable national and international regulations and laws, the status of our products could change. Material Safety Data Sheets providing safety precautions, that should be observed when handling or storing Clariant products, are available upon request and are provided in compliance with applicable law. You should obtain and review the applicable Material Safety Data Sheet information before handling any of these products. For additional information, please contact Clariant.

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