SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: POLYFLOP PTFE EK-1983S21R  
Article number: EK1983S21R

1.2 Relevant identified uses of the substance or mixture and uses advised against:  
No further relevant information available.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:  
DAIKIN INDUSTRIES, LTD. CHEMICALS DIVISION:  
Umeda Center Bldg., 4-12, Nakazaki-Nishi 2-chome, Kita-Ku, Osaka, JAPAN  
Phone: (+81) 6-6373-4345 Fax: (+81) 6-6373-4281

Further information obtainable from: http://www.daikin.com/

1.4 Emergency telephone number:

+81-6-6349-7521, +1-256-306-5000, +86-512-5-232-0949, +86-21-34151689, +82-2-568-1722, +49-211-179225-0

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008:

Repr. 1B H360D May damage the unborn child.

Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008:  
The product is classified and labelled according to the CLP regulation.  
Signal word: Danger
Precautionary statements:

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P321 Specific treatment (see on this label).  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 3: Composition/information on ingredients

Information on ingredients:

9002-84-0 Polytetrafluoroethylene  
10-20%

Binder  
5-15%

Polyoxyethylene glycol alkyl ether  
<5%

Eye Dam. 1, H318; Acute Tox. 4, H302; Skin Irrit. 2, H315

13463-67-7 Titanium dioxide  
<5%
Safety data sheet

Trade name: POLYFLON PTFE EK-1983S21R

40.0.10
7631-86-9 Silicon dioxide, chemically prepared ≤5%
1333-86-4 Carbon black ≤5%
872-50-4 N-Methyl-2-pyrrolidone 15-25%
    T Repr. Cat. 2 R61; Xi R36/37/38
    Repr. 1B, H360D; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335
7732-18-5 Water 40-50%
Others 5-15%

SVHC:
872-50-4 N-Methyl-2-pyrrolidone

Additional information: For the wording of the listed risk phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures
General information: Seek medical treatment.
After inhalation: Supply fresh air; consult doctor in case of complaints.
After skin contact:
    Remove contaminated clothes immediately.
    Immediately wash with water and soap and rinse thoroughly.
    Consult a doctor in case of complaints.
After eye contact:
    Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
    Immediately rinse with a lot of water for several minutes. Remove contact lenses if possible. Continue rinsing.
    Consult an ophthalmologist in case of complaints.
After swallowing:
    Rinse mouth with water. Do not induce vomiting.
    Consult a doctor in case of complaints.

4.2 Most important symptoms and effects, both acute and chronic: No further relevant information available.
4.3 Indication of any immediate medical attention and special treatment needed:
No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents: Use fire extinguishing methods suitable for surrounding conditions.
For safety reasons unsuitable extinguishing agents: No further information available.

5.2 Special hazards arising from the substance or mixture:
Formation of toxic gases is possible during heating or in case of fire.

5.3 Advice for firefighters:
Protective equipment:
    Wear fully protective suit.
    Wear self-contained breathing apparatus and protective suit.
    Do not inhale explosion gases or combustion gases.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:
Ensure adequate ventilation before entering the area.
Stay on the windward side.
Keep out unauthorized persons.
Wear appropriate protective devices (See Section 8 Exposure Controls/Personal Protection). Avoid contact with eyes and skin.
Do not swallow the product.

6.2 Environmental precautions:
Do not allow to enter sewers/surface or ground water.
Prevent seepage into sewage system, workpits and cellars.

6.3 Methods and material for containment and cleaning up:
For a small amount of leakage: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders) or collect in an empty container that can be sealed tightly.
For a large amount of leakage: Enclose with banks to avoid outflow. Lead the leakage to a safe place and collect.

6.4 Reference to other sections:
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:
Prevent formation of aerosols.
Ensure good ventilation/exhaustion at the workplace.
Do not handle until all safety precautions have been read and understood.
Information about fire - and explosion protection: Keep ignition sources away - Do not smoke.

7.2 Conditions for safe storage, including any incompatibilities:
Storage
Requirements to be met by storerooms and receptacles:
Store in a cool and dry location.
Provide solvent resistant, sealed floor.
Keep receptacle tightly sealed.
Information about storage in one common storage facility:
No further information available.
See section 10 for information on incompatible materials.
Further information about storage conditions:
Store in cool, dry conditions in well sealed receptacle.
Protect from heat and direct sunlight.
Store receptacle in a well ventilated area.
Store locked up.
7.3 Specific end use(s): No further relevant information available.

SECTION 8: Exposure controls/personal protection

Additional information about design of technical facilities: No further data; see item 7.

8.1 Control parameters No further information available.
Ingredients with limit values that require monitoring at the workplace:

872-50-4 N-Methyl-2-pyrrolidone
OEL (Japan) Long-term value: 4 mg/m³, 1 ppm
WEEL (USA) Long-term value: 10 ppm
Skin

Ingredients with biological limit values:

872-50-4 N-Methyl-2-pyrrolidone
BEI (USA) 100 mg/L
Medium: urine
Time: end of shift
Parameter: 5-Hydroxy-N-methyl-2-pyrrolidone

8.2 Exposure controls
Personal protective equipment
General protective and hygienic measures:
Wash hands before breaks and at the end of work.
Do not eat or drink while working.
Keep away from tobacco products.
Respiratory protection: 
Use respiratory protective device with filters for organic and acid gas (or airline respirators in some cases) if formation of toxic gases is possible while the product is heated. 
Use respiratory protective device with organic gas cartridge.

Protection of hands: 
Protective gloves

Material of gloves: Rubber
Penetration time of glove material
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: 
Safety glasses

Body protection: Protective work clothing

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
General Information
Appearance

Form: Liquid
Colour: Brown
Odour: Aromatic
Odour threshold: Not determined.

pH-value: 3-6
Melting point/Melting range: No further information available.
Boiling point/Boiling range: No further information available.
Flash point: Not applicable.

Flammability (solid, gaseous): Not applicable.

Ignition temperature:
Decomposition temperature: No further information available.
Self-igniting: Product is not selfigniting.
Danger of explosion: Product does not present an explosion hazard.
Lower explosive limit: No further information available.
Upper explosive limit: No further information available.
Vapour pressure: No further information available.

Density:
Relative density Not determined.
Vapour density Not determined.
Evaporation rate Not determined.

Solubility in / Miscibility with water: No further information available.

Partition coefficient (n-octanol/water): No further information available.

Viscosity:
Dynamic: Not determined.
Kinematic: Not determined.

9.2 Other information: No further relevant information available.
**SECTION 10: Stability and reactivity**

10.1 Reactivity

10.2 Chemical stability

**Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.

10.3 Possibility of hazardous reactions: No dangerous reactions known under normal conditions of use.

10.4 Conditions to avoid: Keep away from heat, sparks, flame, high temperature.

10.5 Incompatible materials: No further relevant information available.

10.6 Hazardous decomposition products:

- Fluorophosgene in contact with naked flame or red hot objects.
- As for decomposition products, particulate matters and extremely toxic/corrosive fumes may be generated (HF, carbonyl fluoride, monomer, perfluoroisobutylene).
- Decomposition products differ depending on the temperature and conditions.

**SECTION 11: Toxicological information**

11.1 Information on toxicological effects

**Acute toxicity** no data

**LD/LC50 values relevant for classification:**

- 872-50-4 N-Methyl-2-pyrrolidone
  - Oral LD50 3914 mg/kg (Rat)
  - Dermal LD50 8000 mg/kg (Rabbit)

**Primary irritant effect**

- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitisation:** No sensitising effects known.

**Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

**Irritant**

**General effects:**

- Fumes generated during burning may cause "polymer fume fever" (flu-like symptoms such as fever, chill, cough). This may last for a whole day and night.
- Fumes are not absorbed in skin. No sensitizing effect known.

**Effects of hydrogen fluoride:**

- Low concentration of hydrogen fluoride may cause feeling of dyspnea, cough, irritation in eyes, nose, throat, fever, chill for 1-2 days.
- After that, dyspnea, cyanosis and pulmonary edema may be seen.
- High concentration of hydrogen fluoride damages liver and kidney.

**Effects of carbonyl fluoride:**

- **Skin:** Irritation or eruption
- **Eye:** Ulcer in cornea, conjunctiva
- **Respiratory system:** Irritation
- **Lung:** Temporary symptoms such as cough, pain, dyspnea
  - Persons who have experienced lung diseases are vulnerable to toxicity caused by excessive exposure to pyrolysis products

**CMR effects**

- **Repr. 1B**
- **Germ cell mutagenicity:** No further information available.
- **Carcinogenicity:** No further information available.
- **Reproductive toxicity:** No further information available.
- **Aspiration hazard:** No further information available.

**Specific target organ toxicity - single exposure:** No further information available.
**Specific target organ toxicity - repeated exposure:** No further information available.
**SECTION 12: Ecological information**

12.1 Toxicity
Aquatic toxicity: No further relevant information available.
12.2 Persistence and degradability: No further relevant information available.
12.3 Bioaccumulative potential: No further relevant information available.
12.4 Mobility in soil: No further relevant information available.
Ecotoxicological effects: No data
12.5 Results of PBT and vPvB assessment
PBT: No further relevant information available.
vPvB: No further relevant information available.
12.6 Other adverse effects: No further relevant information available.

**SECTION 13: Disposal considerations**

13.1 Waste treatment methods
Recommendation: Disposal must be made according to official regulations.
Uncleaned packaging
Recommendation: Disposal must be made according to official regulations.

**SECTION 14: Transport information**

14.1 UN-Number:
ADR, ADN, IMDG, IATA Not applicable
14.2 UN proper shipping name:
ADR, ADN, IMDG, IATA Not applicable
14.3 Transport hazard class(es):
ADR, ADN, IMDG, IATA Not applicable
14.4 Packing group:
ADR, IMDG, IATA Not applicable
14.5 Environmental hazards:
Marine pollutant: No
14.6 Special precautions for user:
Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:
Not applicable.
Transport/Additional information: Avoid direct sunlight. Make sure of no damage, corrosion, leaks on the receptacles. Take necessary measures for preventing cargo shift.
UN "Model Regulation": -

**SECTION 15: Regulatory information**

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
No further relevant information available.
Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.
Hazard pictograms

![GHS07](image)
![GHS08](image)

Signal word Danger

Hazard-determining components of labelling:
N-Methyl-2-pyrrolidone
Safety data sheet

Trade name: POLYFLON PTFE EK-1983S21R

Hazard statements
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H360D May damage the unborn child.
H335 May cause respiratory irritation.

Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 Specific treatment (see on this label).
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations No further information available.

Other regulations, limitations and prohibitive regulations: No further information available.

Substances of very high concern (SVHC) according to REACH, Article 57:
872-50-4 N-Methyl-2-pyrrolidone

SECTION 16: Other information
The product is for the industrial use only. We do not guarantee the safety in case the product is used for the other purposes. When using the product for health-care application or food/feed application, consult us in advance. This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing SDS: EHS Department
Contact: http://www.daikin.com/

Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the “International Air Transport Association” (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the “International Civil Aviation Organisation” (ICAO)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Repr. 1B: Reproductive toxicity, Hazard Category 1B
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3