SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier
Product Form: Mixture
Product Name: SWAK™

1.2. Intended Use of the Product
Recommended Uses And Restrictions: Anaerobic pipe thread sealant

1.3. Name, Address, and Telephone of the Responsible Party

Company
Swagelok Manufacturing Company, LLC
29495 F.A. Lennon Drive
Solon, Ohio 44139
440-519-4000
www.swagelok.com

Manufacturer
Swagelok Manufacturing Company, LLC
29495 F.A. Lennon Drive
Solon, Ohio 44139
440-519-4000
www.swagelok.com

1.4. Emergency Telephone Number
Emergency Number: CHEMTREC: (800) 424-9300

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the Substance or Mixture
GHS classification (KR)
Health Hazards
Skin corrosion/irritation, Category 2
Serious eye damage/eye irritation, Category 2
Sensitisation — Skin, Category 1
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation

Environmental Hazards
Hazardous to the aquatic environment — Chronic Hazard, Category 4

Hazard Pictograms (GHS-KR): ⚠️

Signal Word (GHS-KR): Warning

Hazard Statements (GHS-KR):
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H413 - May cause long lasting harmful effects to aquatic life

Precautionary Statements (GHS-KR):
P261 - Avoid breathing vapors, mist, or spray.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, and eye protection.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
P321 - Specific treatment (see section 4 on this SDS).
P332+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
2.2. Other Hazards

Other Hazards Which Do Not Result In Classification: Exposure may aggravate pre-existing eye, skin, or respiratory conditions. Inhalation of fumes from overheating "TEFLON" PTFE may cause polymer fume fever, a temporary flu-like illness with fever, chills and sometimes cough, of approximately 24 hours duration. This material contains an organic peroxide. Heating may cause hazardous decomposition. Hazardous decomposition products from peroxides are flammable and can be explosive under confinement. Dust is not expected to be generated, however, repeated or prolonged exposure to titanium dioxide dust via inhalation is suspected of causing cancer of the respiratory tract. Due to the product's final form, combustible dusts are not likely to be generated, however if small particles are generated during further processing, handling or by other means, may form combustible dust concentrations in air.

SECTION 3: COMPOSITION, INFORMATION ON INGREDIENTS

3.1. Mixture/Substance

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS No</th>
<th>Formula</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylene glycol</td>
<td>25322-68-3</td>
<td>(C2H4O)nH2O</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>13463-67-7</td>
<td>O2Ti</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>Polytetrafluoroethylene</td>
<td>9002-84-0</td>
<td>(C2F4)x</td>
<td>30 - 40%</td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl),.alpha,.alpha.{[(1-methylethyldiene)di-4,1-phenylene]bis[.omega.{[2-methyl-1-oxo-2-propenyl]oxy}}]-</td>
<td>41637-38-1</td>
<td>(C2H4O)n(C2H4O)nC2 3H24O4</td>
<td>30 - 40%</td>
</tr>
<tr>
<td>Silica, amorphous, fumed, crystalline-free</td>
<td>112945-52-5</td>
<td>Unspecified</td>
<td>&lt; 1%</td>
</tr>
<tr>
<td>Proprietary initiator</td>
<td>Proprietary</td>
<td>Proprietary</td>
<td>&lt; 1%</td>
</tr>
<tr>
<td>Particulates not otherwise regulated (PNOR)</td>
<td>Not applicable</td>
<td>Unspecified</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

First-Aid Measures After Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

First-Aid Measures After Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists.

First-Aid Measures After Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

First-Aid Measures After Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/Injuries: Causes eye irritation. Causes skin irritation. May cause respiratory irritation. Skin sensitisation.

Symptoms/Injuries After Inhalation: Irritation of the respiratory tract and the other mucous membranes.

Symptoms/Injuries After Skin Contact: Redness, pain, swelling, itching, burning, dryness, and dermatitis. May cause an allergic skin reaction.

Symptoms/Injuries After Eye Contact: Contact causes severe irritation with redness and swelling of the conjunctiva.
4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

Other medical advice or treatment: If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: EXPLOSION, FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

- **Suitable Extinguishing Media**: Use extinguishing media appropriate for surrounding fire.
- **Unsuitable Extinguishing Media**: Do not use a heavy water stream. Use of heavy stream of water may spread fire.
- **Personal Protection (Emergency Response)**: Do not enter fire area without proper protective equipment, including respiratory protection.

5.2. Special Hazards Arising From the Substance or Mixture

- **Fire Hazard**: Contains substances that are combustible dusts. If dried and allowed to accumulate, may form combustible dust concentrations in air that could ignite and cause an explosion. Take appropriate precautions.
- **Explosion Hazard**: Product itself is not explosive but if dust is generated, dust clouds suspended in air can be explosive.
- **Reactivity**: This material contains an organic peroxide. Heating may cause hazardous decomposition. Hazardous decomposition products from peroxides are flammable and can be explosive under confinement.

5.3. Advice for Firefighters

- **Precautionary Measures Fire**: Exercise caution when fighting any chemical fire.
- **Protection During Firefighting**: Do not enter fire area without proper protective equipment, including respiratory protection.
- **Firefighting Instructions**: Use water spray or fog for cooling exposed containers.
- **Other Information**: Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

- **General Measures**: Avoid breathing (vapor, mist, spray). Do not get in eyes, on skin, or on clothing. Avoid generating dust. Remove ignition sources. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.

  - **For Non-Emergency Personnel**
    - **Protective equipment**: Use appropriate personal protection equipment (PPE).
    - **Emergency procedures**: Evacuate unnecessary personnel.

  - **For Emergency Responders**
    - **Protective equipment**: Equip cleanup crew with proper protection.
    - **Emergency procedures**: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

6.2. Environmental Precautions

- **Environmental Precautions**: Prevent entry to sewers and public waters. Avoid release to the environment.

6.3. Methods and Material for Containment and Cleaning Up

- **For Containment**: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Avoid generation of dust during clean-up of spills.
- **Methods for Cleaning Up**: Clean up spills immediately and dispose of waste safely. Absorb and/or contain spill with inert material. Contact competent authorities after a spill.
- **Prevention Measures for Secondary Accidents**: No data available

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

- **Technical Measures**: Comply with applicable regulations. Avoid creating or spreading dust.
- **Additional Hazards When Processed**: Keep away from heat, sparks, open flames, hot surfaces. – No smoking. This material contains an organic peroxide. Heating may cause hazardous decomposition. Hazardous decomposition products from peroxides are flammable and can be explosive under confinement. Inhalation of fumes from overheating "TEFLON" PTFE may cause polymer fume fever, a temporary flu-like illness with fever, chills and sometimes cough, of approximately 24 hours duration.
Local And General Ventilation: No data available
Precautions For Safe Handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid breathing vapors, mist, spray. Avoid contact with eyes, skin and clothing. Avoid creating or spreading dust. Keep away from heat, sparks, open flames, hot surfaces. – No smoking.

7.2. Conditions for Safe Storage, Including Any Incompatibilities
Technical Measures: Comply with applicable regulations. Avoid creating or spreading dust. Use explosion-proof electrical, ventilating, lighting equipment. Proper grounding procedures to avoid static electricity should be followed.
Incompatible Substances Or Mixtures: Refer to section 10
Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.
Material Used In Packaging/Containers: No data available

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits/ Biological limits

<table>
<thead>
<tr>
<th>Material Used In Packaging/Containers</th>
<th>Exposure limits/ Biological limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH TWA (mg/m³)</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>ACGIH ACGIH chemical category</td>
<td>Not Classifiable as a Human Carcinogen</td>
</tr>
<tr>
<td>Korea ISHA TWA (mg/m³)</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>China OEL STEL</td>
<td>16 mg/m³ (total dust)</td>
</tr>
<tr>
<td>China OEL TWA</td>
<td>8 mg/m³ (total dust)</td>
</tr>
<tr>
<td>Particulates Not Otherwise Regulated (Pnor) (Not applicable)</td>
<td></td>
</tr>
<tr>
<td>ACGIH ACGIH TWA (mg/m³)</td>
<td>3 mg/m³ Respirable fraction</td>
</tr>
<tr>
<td></td>
<td>10 mg/m³ Total Dust</td>
</tr>
<tr>
<td>Korea ISHA TWA (mg/m³)</td>
<td>10 mg/m³ (no more than 1% crystalline silica)</td>
</tr>
<tr>
<td>China OEL STEL</td>
<td>16 mg/m³ (free SiO₂ &lt;10%-total)</td>
</tr>
<tr>
<td>China OEL TWA</td>
<td>8 mg/m³ (free SiO₂ &lt;10%, except asbestos and toxic substances. Use PC-TWA of silica When free SiO₂ &gt;10%-total)</td>
</tr>
</tbody>
</table>

Biological Limits No data available

8.2. Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Proper grounding procedures to avoid static electricity should be followed.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.
Hand Protection: Wear protective gloves.
Eye protection: Chemical safety goggles.
Skin And Body Protection: Wear suitable protective clothing.
Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Grainty off-white paste with mild odor</td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour</td>
<td>Mild</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
</tbody>
</table>
**SECTION 10: STABILITY AND REACTIVITY**

10.1 Reactivity: This material contains an organic peroxide. Heating may cause hazardous decomposition. Hazardous decomposition products from peroxides are flammable and can be explosive under confinement.

10.2 Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

10.3 Possibility Of Hazardous Reactions: Hazardous polymerization will not occur.

10.4 Conditions To Avoid: Direct sunlight, extremely high or low temperatures, and incompatible materials. Sparks, heat, open flame and other sources of ignition. Dust accumulation (to minimize explosion hazard). UV light sources.

10.5 Incompatible materials: Strong acids, strong bases, strong oxidizers, amines, active metals, ammonia, combustible materials, reducing agents, pure oxygen, oxygen scavengers, peroxides.

10.6 Hazardous Decomposition Products: Toxic gases may be formed, fluoride compounds, silicon oxides, carbon oxides (CO, CO₂), phenolic compounds, acrid smoke, hydrogen.

**SECTION 11: TOXICOLOGICAL INFORMATION**

11.1 Information on Toxicological Effects - Product

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Eye damage/Irritation</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>Respiratory Sensitization</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Skin Sensitization</td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>Germ Cell Mutagenicity</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Specific Target Organ Toxicity</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>(Single Exposure)</td>
<td></td>
</tr>
<tr>
<td>Specific Target Organ Toxicity</td>
<td>Not classified.</td>
</tr>
<tr>
<td>(Repeated Exposure)</td>
<td></td>
</tr>
<tr>
<td>Aspiration Hazard</td>
<td>Not classified.</td>
</tr>
</tbody>
</table>

11.2 Information on Toxicological Effects Ingredient(s)

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>LD50 Oral Rat</th>
<th>LC50 Inhalation Rat (mg/l)</th>
<th>LC50 Inhalation Rat (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylene Glycol (25322-68-3)</td>
<td>47000 mg/kg</td>
<td>1.4 mg/l/4h</td>
<td>220 ppm/4h</td>
</tr>
<tr>
<td>LD50 Dermal Rabbit</td>
<td>&gt; 20 ml/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silica, Amorphous, Fumed, Crystalline-Free (112945-52-5)</td>
<td>3160 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50 Oral Rat</td>
<td>382 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50 Dermal Rabbit</td>
<td>0.126 ml/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proprietary Initiator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50 Oral Rat</td>
<td>0.126 ml/kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LD50 Oral Rat | > 10000 mg/kg

### SECTION 12: ECOLOGICAL INFORMATION

#### 12.1. Toxicity

**Ecotoxicity**: No data available

**Fish Toxicity / Other Toxicity**: No data available

**Other Information**: Avoid release to the environment

**Proprietary Initiator**

**LC50 Fish 1**: 3.9 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])

#### 12.2. Persistence and Degradability

**SWAK™**

**Persistence and Degradability**: May cause long-term adverse effects in the environment.

#### 12.3. Bioaccumulative Potential

**SWAK™**

**Bioaccumulative Potential**: Not established.

**Proprietary Initiator**

**BCF Fish 1**: 35.5

#### 12.4. Mobility in Soil

No data available

#### 12.5. Other Adverse Effects

**Other Information**: Avoid release to the environment.

### SECTION 13: DISPOSAL CONSIDERATIONS

#### 13.1. Waste treatment methods

**Description of waste materials**: No data available

**Waste treatment methods**: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

### SECTION 14: TRANSPORT INFORMATION

#### 14.1 In accordance with UN TDG

Not regulated for transport

#### 14.2 In Accordance with IATA

Not regulated for transport

#### 14.3 In Accordance with IMDG

Not regulated for transport

### SECTION 15: REGULATORY INFORMATION

#### Asia/Pacific Regulations

**Polytetrafluoroethylene (9002-84-0)**

**Regulatory Reference**

- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on the Canadian DSL (Domestic Substances List)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Listed on the United States TSCA (Toxic Substances Control Act) inventory
- Listed on INSQ (Mexican national Inventory of Chemical Substances)

**Polyethylene Glycol (25322-68-3)**

**Regulatory Reference**

- Listed on the EU NLP (No Longer Polymers) inventory
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on the Canadian DSL (Domestic Substances List)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
**SWAK™ Safety Data Sheet**  
The SDS is prepared in accordance with the SDS requirements of the Ministry of Employment and Labor (MOEL) of South Korea public notice No. 2012-14

| Listed on the United States TSCA (Toxic Substances Control Act) inventory |
| Listed on Turkish inventory of chemical |

### Silica, Amorphous, Fumed, Crystalline-Free (112945-52-5)

**Regulatory Reference**
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on the Canadian DSL (Domestic Substances List)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Listed on INSQ (Mexican national Inventory of Chemical Substances)

### Proprietary Initiator

**Regulatory Reference**
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on the Canadian DSL (Domestic Substances List)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
- Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Listed on the United States TSCA (Toxic Substances Control Act) inventory

### Poly(Oxy-1,2-Ethanediyl), .Alpha.,.Alpha.'-[(1-Methylthiolidene)Di-4,1-Phenylene]Bis.[.Omega.-[(2-Methyl-1-Oxo-2-Propenyl)Oxy]- (41637-38-1)

**ISHA**

**Name, Toxicity and Protective Measures of New Chemical Substances**

**Regulatory Reference**
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on the Canadian DSL (Domestic Substances List)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the United States TSCA (Toxic Substances Control Act) inventory

### Titanium Dioxide (13463-67-7)

**Ordinance for Enforcement of the Occupational Safety and Health Act (Annex 11-4)**

Hazardous work environment factors measurement object

**Standard on Occupational Safety and Health (MOEL sixth issue, 2010.9.30)**

Hazardous Substances Subject to Control

**ISHA**

Hazardous Substances Subject to Control - Metals

**Regulatory Reference**
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on the Canadian DSL (Domestic Substances List)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
- Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on INSQ (Mexican national Inventory of Chemical Substances)
Listed on Turkish inventory of chemical

SECTION 16: OTHER INFORMATION

| Revision Date | : 2016/04/05 |
| Revision Number | : 1.0 |
| Date of Issue | : 2016/04/05 |
| Other Information | : The SDS is prepared in accordance with SDS requirements of the Ministry of Employment and Labor (MOEL) of South Korea public notice No. 2012-14 |

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS Korea GHS