1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Sumilizer GS(F)
General Use: Antioxidant for manufacturing and processing of plastics

MANUFACTURER:
Sumitomo Chemical Co., Ltd.
27-1, Shinkawa, 2-Chome,
Chuo-ku, Tokyo 104, Japan

EMERGENCY CONTACT:
Sumitomo Chemical Co., Ltd.
TEL: +81-3-5543-5641 (Japan)
FAX: +81-3-5543-5916 (Japan)

2. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CAS</th>
<th>%</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Sumilizer GS(F)</td>
<td>123968-25-2</td>
<td>100</td>
<td>15mg/m³</td>
<td>10 mg/m³</td>
</tr>
</tbody>
</table>


3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: White granule that may cause eye irritation. Avoid contact with skin and inhaling dust, mist, or smoke from spray application. When using this substance, use eyes, skin and respiratory protection.

POTENTIAL HEALTH EFFECTS:

INHALATION: No known effects, however, dust, mist, or smoke from spray application may be nuisance.

EYE CONTACT: May cause irritation.

SKIN CONTACT: Non-irritating.

INGESTION: Oral LD₅₀ in rats is more than 5,000 mg/kg.

CHRONIC: No known effects.

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MSDS continued on next page.(US)
4. EMERGENCY AND FIRST AID MEASURES

INHALATION : If exposure to dust causes irritation or distress, remove subject to fresh air. Give oxygen or artificial respiration if needed. Get medical attention.

SKIN CONTACT : Immediately flush skin with soap and plenty of water, and contact a physician. Remove clothing. Wash clothing before reuse.

EYE CONTACT : Immediately flush eyes with plenty of water for at least 15 minutes and contact a physician.

INGESTION : If swallowed, get medical attention.

5. FIRE-FIGHTING MEASURES AND EXPLOSION HAZARD DATA

FLASH POINT : Not applicable

EXPLOSION LIMIT : Lower : Not applicable, Upper : Not applicable

AUTOIGNITION TEMPERATURE : Not applicable

EXTINGUISHING MEDIA : Use carbon dioxide or dry chemical for small fires; universal foam or water spray for large fires.

SPECIAL FIRE-FIGHTING PROCEDURES : Fire fighters should be provided with normal protective equipment and positive-pressure self-contained breathing apparatus.

UNUSUAL FIRE and EXPLOSION HAZARDS : To reduce potential explosion hazard, avoid dispersion of dust in air.

HAZARDOUS DECOMPOSITION PRODUCTS : May generate CO when heated to burning.

6. ACCIDENTAL RELEASE MEASURES

GENERAL : To reduce potential explosion hazard, avoid dispersion of dust in air and control ignition sources. Consult an expert on disposal of the recovered material. Ensure disposal is in compliance with government requirements and ensure conformity of local disposal regulations. Notify the appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill.

LAND SPILL : Sweep up or shovel into suitable containers and then wash out with water. Prevent washings from entering waterways.

7. HANDLING AND STORAGE

PRECAUTIONS : Avoid contact with skin and inhaling dust, mist, or smoke from spray application. Use with adequate ventilation. Ground and bond containers when transferring material. Keep containers tightly closed when not in use.

End of Page 2  MSDS continued on next page.(US)
8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

ENGINEERING CONTROLS (VENTILATION) : Use local ventilation at places where dust can be released into the workplace air.
Keep dust concentrations below the recommended TLV.

OSHA PEL for □ Nuisance dust, Total dusts □ = 15 mg/m3
ACGIH TLV for □ Particles not otherwise classified □ = 10 mg/m3

PERSONAL PROTECTION

RESPIRATORY : An adequate ventilation is needed. Wear a dust respirator.

PROTECTIVE GLOVES : Wear rubber or plastic gloves which have been demonstrated to provide an impervious barrier to prevent dermal exposure.

EYE PROTECTION : Wear safety goggles or equivalent eye protection.

OTHER : Wear appropriate protective clothing to prevent skin contact.

WORK/HYGIENIC PRACTICES : Always clean protective equipment and workplace.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE :White granule ODOR :Odorless
VAPOR PRESSURE :0.045 Pa (25 □) MELTING POINT :ca.119 □
SPECIFIC GRAVITY :1.01 BOILING POINT :>250 □
SOLUBILITY in water :<0.005 mg/L(20 □) VAPOR DENSITY :Not known
pH :Not known PERCENT VOLATILE :Not applicable
VAPORATION RATE :Not applicable Log Pow :>6.2 (22 □)

10. STABILITY AND REACTIVITY

STABILITY :Stable at normal conditions.
HAZARDOUS POLYMERIZATION :Will not occur.
CONDITIONS TO AVOID :High temperature
INCOMPATIBILITY :Not known
HAZARDOUS DECOMPOSITION PRODUCTS :See section 5

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MSDS continued on next page.(US)
11. TOXICOLOGICAL INFORMATION

ACUTE INHALATION EFFECTS : No data available.

EYE EFFECT : IRRITANT (minimally irritating) to rabbit eyes according to the OSHA standards.(1)

SKIN EFFECTS : Not irritating to rabbit skin.(1)
Not skin sensitizing to guinea pigs.(1)

ACUTE EFFECTS : The oral LD50 in rats is > 5,000 mg/kg.(1)
The dermal LD50 in rats is > 2,000 mg/kg.(1)

SUBACUTE EFFECTS : NOEL in subacute oral 3-month toxicity study in rats is <1,000 mg/kg/day.(1)

MUTAGENICITY : Negative results were obtained by the following studies(1): Ames test, gene mutation assay in Chinese hamster V79 cells in vitro, and chromosomal analysis of Chinese hamster ovary cells.

CHRONIC EFFECTS/CARCINOGENICITY : Not listed by IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

ACUTE TOXICITY : The LC50 (96 hr.) in Cyprinus carpio is more than water solubility of the material .(1)
The EC50 (48 hr.) in Daphnia magna is more than water solubility of the material .(1)

BIODEGRADABILITY : Not biodegradable.

13. DISPOSAL CONSIDERATIONS

May be incinerated by adequate method. Dispose in accordance with federal, state and local regulations. The owner of the material is responsible for proper waste disposal.

14. TRANSPORT INFORMATION

Ground and bond containers when transferring material. Keep containers tightly closed during transport.

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15. REGULATORY INFORMATION (not meant to be all inclusive)

TSCA : Listed on the TSCA Inventory.
FFDCA : Approved (21 CFR 178.2010; Antioxidants and/or stabilizer for polymers).

INTERNATIONAL :
EU : Listed on ELINCS.
German BGA : Approved.
MITI Japan : LERMCS/ Approved.
JHOSPA : Approved.
Env. Korea : TCCL/ Approved.

16. OTHER INFORMATION

REVISION SUMMARY : Revised due to amendment of contents in section 3, 8, 11 and 15.

REFERENCES : (1) Technical reports of Sumitomo Chemical Co.Ltd.

The information is believed to be accurate and represents the best information currently available to us. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

End of MSDS (US)