SAFETY DATA SHEET

Issued Date; 26th August 2016 Analytical Products Department Product Business Center IA Platform Business Headquarters Yokogawa Electric Corporation 2-9-32 Naka-cho, Musashino, Tokyo 180-8750, Japan TEL. 81-422-52-5845

Part Number K9044FX

Product name: Conductive silicone grease

Hazards identification GHS label elements: No hazard

Composition/information on ingredients Chemical identity: Carbon black (mixed with Silicone).

Refer to next page SDS regarding other information and detail. SDS supplies only handling information, and does not always guarantee all contents.



1. Chemical product and company identification

| Product name | KS-660 |
|-----------------------------|---|
| MANUFACTURER | |
| COMPANY NAME | Shin-Etsu Chemical Co., Ltd. |
| ADDRESS | 13-1, Isobe 2-chome, Annaka-shi, Gunma 379-0195, JAPAN |
| CONTACT | Quality Assurance Department (Gunma Complex) |
| TELEPHONE | 027-385-2172 |
| NUMBER | |
| FAX NUMBER | 027-385-2753 |
| SUPPLIER | |
| COMPANY NAME | Shin-Etsu Chemical Co., Ltd. |
| ADDRESS | 6-1, Ohtemachi 2-chome, Chiyoda-ku, Tokyo 100-0004, JAPAN |
| CONTACT | Planning & Administration Department Silicone Division |
| TELEPHONE | 03-3246-5121 |
| NUMBER | |
| FAX NUMBER | 03-3246-5381 |
| EMERGENCY | 027-385-2172(Holiday/Nighttime:027-385-2111) |
| Recommended use of the chem | ical and restrictions on use |
| Intended use | Greases and fluid compounds |

Electrical conduction

Restrictions on use

2. Hazards identification

GHS classification

Shir Etsu

The product is not classified according to GHS.

3. Composition/information on ingredients

Substance or mixture

Mixture (Silicone mixture)

Industrial use only.

| | Gazette notification | | | |
|--------------|----------------------|----------|----------|-------------------|
| Components | CAS Number | ENCS no. | ISHL no. | Concentration (%) |
| Carbon black | 1333-86-4 | NA | NA | 10 - 15 |

All components are listed on ENCS under CSCL.

4. First aid measures

| If inhaled | Not applicable. |
|--------------------|--|
| lf on skin | Wash skin with soap and water. Get medical attention if irritation develops and persists. |
| If in eyes | Rinse immediately with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists. |
| If swallowed | Rinse mouth. Get medical attention immediately. |
| Notes to physician | Treat symptomatically. |

5. Fire-fighting measures

| Extinguishing media | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). | |
|-------------------------------------|---|--|
| Extinguishing media to avoid | None known. | |
| Specific hazards | By heating and fire, harmful vapors/gases may be formed. | |
| Special fire fighting procedures | Move containers from fire area if you can do so without risk. In the event of fire, cool tanks with water spray. | |
| Protection of fire-fighters | Firefighters must use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots, and self-contained breathing apparatus. | |

6. Accidental release measures

| Personal precautions, protective equipment and emergency measures | Wear appropriate personal protective equipment. | |
|---|---|--|
| Environmental precautions | Prevent further leakage or spillage if safe to do so. | |
| Clean-up methods and materials and containment measures | Eliminate sources of ignition. Collect spillage. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. | |
| | Never return spills in original containers for re-use. | |

7. Handling and storage

| Handling | |
|----------------------------------|---|
| Technical measures | No specific recommendations. |
| Local and general ventilation | Provide adequate ventilation. |
| Precautions | Use care in handling/storage. |
| Safe handling advice | None specific. |
| Storage | |
| Technical measures | No specific recommendations. |
| Suitable storage conditions | Keep container tightly closed. Store in a cool, dry place out of direct sunlight. |
| Incompatible products | Refer to section 10: stability and reactivity. |
| Safe packaging materials | Keep in original container. |

8. Exposure controls/personal protection

Occupational exposure limits

| Components | Туре | Value | Form |
|---------------------------------|---|--------------------------|------------------------------|
| Carbon black (CAS 1333-86-4) | TWA | 4 mg/m3 | Total dust. |
| | | 1 mg/m3 | Respirable dust. |
| US. ACGIH Threshold Limi | t Values | | |
| Components | Туре | Value | Form |
| Carbon black (CAS 1333-86-4) | TWA | 3 mg/m3 | Inhalable fraction. |
| gineering measures | Provide eyewash station. | | |
| sonal protective equipment | t i i i i i i i i i i i i i i i i i i i | | |
| Respiratory protection | No personal respiratory protective equi | pment normally required. | |
| Hand protection | Wear protective gloves. | | |
| Eye protection | Wear safety glasses with side shields (or goggles). | | |
| Skin and body protection | No special protective equipment requir | ed. | |
| giene measures | Wash hands before breaks and immed good industrial hygiene and safety pra- | | duct. Handle in accordance w |

9. Physical and chemical properties

| Appearance | |
|--|--------------------------------|
| Form | Paste. |
| Color | Black. |
| Odor | Odorless. |
| рН | Not available. |
| Melting point/Freezing point | Not applicable |
| Boiling point, initial boiling point, and boiling range | Not applicable |
| Flash point | > 212 °F (> 100 °C) Closed Cup |
| Auto-ignition temperature | No data |
| Flammability limit - lower (%) | No data |
| Flammability limit - upper (%) | No data |

| Vapor pressure | Negligible (25 °C) |
|--|------------------------------|
| Vapor density | Not applicable |
| Evaporation rate | Negligible (Butyl Acetate=1) |
| Specific gravity | 1.04(25 ℃) |
| Solubility (Water) | Not soluble |
| Partition coefficient (n-octanol/water) | Not applicable |
| Decomposition temperature | Not available. |
| | |

10. Stability and reactivity

| Stability Possibility of hazardous reactions | Stable at normal conditions. Hazardous polymerization does not occur. |
|--|--|
| Conditions to avoid | None specific. |
| Incompatible materials | Strong oxidizing agents. |
| Hazardous decomposition products | Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition product: Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde. |

11. Toxicological information

| Acute toxicity | | |
|------------------------------|-------------------------------|---|
| Components | Species | Test Results |
| Carbon black (CAS 1333-8 | 86-4) | |
| Acute | | |
| Oral | | |
| LD50 | Rat | > 8000 mg/kg |
| Carcinogenicity | | It is embedded in the product and not available as respirable dusts. When as supplied, the product will not pose hazards. |
| ACGIH Carcinogens | | |
| Carbon black (CAS 1333-86-4) | | A3 Confirmed animal carcinogen with unknown relevance to humans. |
| IARC Monographs. (| Overall Evaluation of Carcino | genicity |
| Carbon black (CAS 1333-86-4) | | 2B Possibly carcinogenic to humans. |
| Japan Society for Oc | ccupational Health: Carcinog | en |
| Carbon black (CA | AS 1333-86-4) | 2B Possibly carcinogenic to humans. |
| 12. Ecological info | rmation | |

Ecotoxicity

None known.

13. Disposal considerations

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Local disposal regulations
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Incinerate. Incinerator should be appropriately equipped for silica and other fine powder which the product will generate in incineration. Workers should wear appropriate personal protective equipment(s) such as respirator. Contract with a disposal operator licensed by the Law on Disposal and Cleaning. Dispose of contents/container in accordance with local/regional/national/international regulations.

14. Transport information

International regulations

ΙΑΤΑ

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Domestic regulation

Follow regulation in section 15 for domestic transportation.

15. Regulatory information

| 15. Regulatory informatic | |
|---|--|
| Industrial Safety and Health Act | |
| Specified substances regula | ation |
| Class 1 designated che | |
| Not regulated. | |
| Class 2 designated che | mical substances |
| Not regulated. | |
| Class 3 designated che Not regulated. | mical substances |
| Organic solvent regulation | |
| Class 1 organic solvent | S |
| Not regulated. | |
| Class 2 organic solvent | S |
| Not regulated. | |
| Class 3 organic solvent Not regulated. | S |
| Notifiable substances | |
| CARBON BLACK | 10 - 15 % |
| Labeling substances | |
| Not applicable | |
| Poisonous and Deleterious Sub | |
| Specified poisonous substa | nces |
| Not regulated. Poisonous substances | |
| Not regulated. | |
| Deleterious substances | |
| Not regulated. | |
| Act on the Evaluation of Chemic Class I specified chemical s | cal Substances and Regulation of Their Manufacture, etc. |
| Not regulated. | ubstances |
| Class II specified chemical | substances |
| Not regulated. | |
| Monitoring chemical substa | nces |
| Not regulated. Priority Assessment Chemic | nal Subatanana (DACa) |
| Not regulated. | |
| Law concerning Pollutant Relea | se and Transfer Register |
| | s (substance name, ordinance number and content) |
| Not applicable | |
| • | nce name, ordinance number and content) |
| Not applicable | nce name, ordinance number and content) |
| Not applicable | |
| Fire Service Act | Designated combustible material (Synthetic resins, others) |
| Ship Safety Law, Dangerous | Not regulated. |
| Goods Marine Transport and | Not rogalatoa. |
| Storage Rule | |
| Air Law, Enforcement Rule | Not regulated. |
| Explosives Control Act | Not applicable. |
| High Pressure Gas Safety Act | Not applicable. |
| Act on Prevention of Marine | Not applicable. |
| Pollution and Maritime | |
| Disaster | |
| 16. Other information | |
| Bibliography | HSDB® - Hazardous Substances Data Bank |
| | IARC Monographs. Overall Evaluation of Carcinogenicity |
| | National Toxicology Program (NTP) Report on Carcinogens |
| | ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits |
| | JJIS Z 7250: 2010 Safety data sheet for chemical products-Content and order of sections |
| | JIS Z 7251: 2010 Labeling of chemicals based on GHS |
| | |

This safety data sheet was prepared in accordance with the Safety Data Sheet for Chemical Products (JIS Z 7250:2010). This information is offered in good faith as typical values and not as a product specification. No warranty, expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. This product has been designed, manufactured and developed solely for general industrial use only. This product is not designed for, intended for use as, or suitable for, medical, surgical or other particular purposes. Users have the sole responsibility and obligation to determine the suitability of this product for any application, to make preliminary tests, and to confirm the safety of this product for their use. Users must never use this product for the purpose of implantation into the human body and/or injection into humans.

| Version number | 01 | |
|----------------|------------|---|
| Revision date | 02-04-2014 | Ļ |