

**SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**Product Name:** HARMONIC GREASE SK-2

**Use of the product:** Lubricating grease.

**Product Code:** None.

**Company Name:** Harmonic Drive Systems Inc.

**Address:** Believe Omori, 7F 6-25-3 Minami-Oi, Shinagawa-ku, Tokyo 140-0013 Japan 140-0013 Japan

**Telephone Number:** (+81)3-5471-7823

**SECTION 2 HAZARDS IDENTIFICATION****EU Information:**

**Classification(67/548/EEC or 1999/45EC):** Not classified.

**Classification(EC1272/2008):**

<b>Physical Hazards:</b>	Flammable solids:	Not classified.
	Pyrophoric solid:	Not classified.
	Self-heating substances and mixtures:	Not classified.
	Corrosive to metals:	Not classified.
<b>Health Hazards:</b>	Acute toxicity(oral):	Not classified.
	Acute toxicity(dermal):	Not classified.
	Acute toxicity(inhalation: mist):	Classification not possible.
	Skin corrosion/irritation:	Classification not possible.
	Serious eye damage/eye irritation:	Classification not possible.
	Sensitization-respiratory:	Classification not possible.
	Sensitization-skin:	Classification not possible.
	Germ cell mutagenicity:	Classification not possible.
	Carcinogenicity:	Classification not possible.
	Toxic to reproduction:	Classification not possible.
	Specific target organ systemic toxicity following single exposure:	Classification not possible.
	Specific target organ systemic toxicity following repeated exposure:	Classification not possible.
<b>Environmental Hazards:</b>	Aspiration toxicity:	Classification not possible.
	Hazardous to the aquatic environment-Acute hazard:	Classification not possible.
	Hazardous to the aquatic environment-Chronic hazard:	Classification not possible.
The hazards without the above mention are "Not applicable" or "Classification not possible".		
<b>Hazard Pictogram(s):</b>	No pictogram.	
<b>Signal Word(s):</b>	No signal word.	
<b>Hazard Statement(s):</b>	No hazard statement.	
<b>Precautionary Statement(s):</b>		

**Prevention:** Not required.**Response:** Not required.**Storage:** Not required.**Disposal:** Not required.**Other Hazards:** Combustibility. Keep away from ignition sources such as heat/sparks/open flames.**SECTION3 COMPOSITION/INFORMATION ON INGREDIENTS****Ingredient(s):**

Chemical Name / Generic Name	CAS#	EC#	Wt%	EU Classification	EU Labelling	USA OSHA PEL	ACGIH TLV	EU ILV	DFG MAK
Refined mineral base oil	Confidential	Confidential	80-90	None	None	5mg/m <sup>3</sup> (TWA: as oil mist)	5mg/m <sup>3</sup> (TWA: as oil mist)	Not established	Not established
Lithium soap thickener	Confidential	Confidential	5- 15	None	None	Not established	Not established	Not established	Not established
Additives	Confidential	Confidential	1- 10	None	None	Not established (Except the below)	Not established (Except the below)	Not established	Not established
(Organic molybdenum.)	71342-89-7	275-347-6	(1-5)	None	None	15 mg/m <sup>3</sup> TWA : Total dust as Mo	10 mg/m <sup>3</sup> TWA : Insoluble compounds , as Mo	Not established	Not established

**Carcinogen:****Chemical Name:** None.**CAS#:****Reference:**

No component of this product is listed as a human carcinogen or a potential carcinogen in IARC Monographs, U.S. NTP, OSHA regulation, and Annex VI of Regulation (EC) 1272/2008.

Refined mineral base oil, by definition, is considered hazardous according to OSHA. Because it carries Threshold limit value(TLV) for mineral oil mist. Refined mineral base oil contain <3.0% DMSO extractable material.

**PBT substance and vPvB substance:****Chemical Name:** None.**CAS#:****Category:**

No component of this product is a PBT or vPvB substance under Regulation (EC)1907/2006.

**SECTION 4 FIRST AID MEASURES****First Aid Measures:****Inhalation:** Remove exposed person to fresh air if adverse effects are observed.**Ingestion:** Do not make person vomit unless directed to do so by medical personnel.**Eye:** Flush immediately with water for at least 15 minutes. Get immediate medical attention.**Skin:** Wash with soap and water. Get medical attention if irritation develops.**Note to Physicians:** Treat symptomatically.**SECTION 5 FIRE FIGHTING MEASURES****Extinguishing Media:**

<b>Extinguishing Media:</b>	foam, dry chemical or carbon dioxide to extinguish flames.
<b>Unsuitable</b>	DO NOT use forcible water.
<b>Extinguishing Media:</b>	
<b>Special Fire</b>	Wear self-contained breathing apparatus and protective clothing if involved in a fire of other
<b>Fighting Procedures:</b>	materials.
<b>Unusual Fire and</b>	Not known.
<b>Explosion Hazards:</b>	
<b>Special Hazards Arising from the Substance or Mixture:</b>	
<b>Hazardous Combustion</b>	CO, CO <sub>2</sub> , Oxides of sulfur
<b>Products:</b>	
<b>Other Properties:</b>	None.
<b>Advice for firefighters:</b>	None.

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## SECTION 6 ACCIDENTAL RELEASE MEASURES

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<b>Personal precautions, protective equipment and emergency procedures:</b>	Eliminate all ignition sources. Evacuate surrounding areas.
<b>Environmental Precautions:</b>	Should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water.
<b>Methods and Material for Containment and Cleaning up:</b>	Sweep material and place in a disposal container. Dispose of via a licensed waste disposal contractor.
<b>Reference to Other Sections:</b>	None.

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## SECTION 7 HANDLING AND STORAGE

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<b>Precautions for Safe Handling:</b>	Put on appropriate personal protective equipment (see SECTION8). Workers should wash hands and face before eating, drinking and smoking. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
<b>Conditions for Safe Storage, Including Any</b>	Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures.
<b>Incompatibilities:</b>	
<b>Specific End Uses:</b>	Lubricating grease.

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## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

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<b>Control Parameters:</b>	Oil mist, mineral: ACGIH; TLV-TWA 5 mg/m <sup>3</sup> (as oil mist).
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**Exposure Controls:****Engineering Controls:** When mist is generated, the limited part should be ventilated.**Personal Protection Equipment(s):**

**Respiratory Protection:**  Required  Not Required Not ordinarily required.

**Eye/Face Protection:**  Required  Not Required Wear safety glasses.

**Skin Protection:**  Required  Not Required To prevent contact, wear impervious clothing such as gloves, apron.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES****Information on Basic Physical and Chemical Properties:****Appearance:** Smooth, dark green, semi-solid.**Odor:** Bland odor.**pH:** No data available.**Boiling Point/Range(°C):** Not applicable.**Melting Point/Range(°C):** Not applicable.**Decomposition** Not applicable.**Temperature(°C):****Flash Point(°C):** >160 (SETA)**Flammable (Explosive) Limits:** No data available.**Autoignition Temperature(°C):** No data available.**Flammability:** No data available.**Explosive Properties:** Not applicable.**Oxidizing Properties:** Not applicable.**Vapor Pressure:** No data available.**Vapor Density:** No data available.**Density/Specific Gravity:** Ca. 0.91 (25°C)**Water Solubility:** Negligible.**Fat Solubility:** No data available.**Partition Coefficient (n-Octanol/Water):** No data available.**Percent Volatile(%):** No data available.**Evaporation Rate:** Not applicable.**Viscosity(m Pa s):** Not applicable.**Other Information:** None.**SECTION 10 STABILITY AND REACTIVITY****Reactivity:** Not known.**Chemical Stability:**  Stable  Unstable**Possibility of Hazardous**  May Occur  Will Not Occur

<b>Reactions:</b>	
<b>Conditions to Avoid:</b>	Heat, sparks, flames, and other ignition sources.
<b>Incompatible Materials:</b>	Acids. Oxidizing agents such as H <sub>2</sub> O <sub>2</sub> , permanganates and perchlorates. Halogens and halogenated compounds.
<b>Hazardous Decomposition Products:</b>	CO, CO <sub>2</sub> , Oxides of sulfur

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**SECTION 11 TOXICOLOGICAL INFORMATION**

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<b>Acute Toxicity:</b>	Oral rats LD50: > 5000 mg/kg , Not classified. (Base oil) Dermal rats LD50: > 5000 mg/kg, Not classified. (Base oil) Inhalation (vapor): No data available. Inhalation (mist) : No data available.
<b>Skin corrosion/irritation:</b>	No data available.
<b>Serious eye damage/eye irritation:</b>	No data available.
<b>Sensitization-respiratory:</b>	No data available.
<b>Sensitization-skin:</b>	No data available.
<b>Germ cell mutagenicity:</b>	No data available.
<b>Carcinogenicity:</b>	Base oil, Thickener, Additives: Not listed by IARC, OSHA, NTP, EU and ACGIH.
<b>Toxic to Reproduction:</b>	No data available.
<b>Specific target organ systemic toxicity following single exposure:</b>	No data available.
<b>Specific target organ systemic toxicity following repeated exposure:</b>	No data available.
<b>Aspiration Toxicity:</b>	No data available.

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**SECTION 12 ECOLOGICAL INFORMATION**

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<b>Ecotoxicity:</b>	
<b>Aquatic:</b>	No data available.
<b>Terrestrial:</b>	No data available.
<b>Persistence/Degradability:</b>	No data available.
<b>Bioaccumulative potential:</b>	No data available.
<b>Mobility in soil:</b>	No data available.
<b>Results of PBT and vPvB assessment:</b>	None.
<b>Other Adverse Effects:</b>	None.

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**SECTION 13 DISPOSAL CONSIDERATIONS**

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**Waste Treatment Methods:** Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations. Contact local environmental or health authorities for approved disposal of this material.

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#### SECTION 14 TRANSPORT INFORMATION

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**UN#:** None.

**UN Proper Shipping Name:** None.

**Transport Hazard Class(es):** None.

**Packing Group:** None.

**Environmental Hazards:**

**Marine Pollutant:**  Yes **Chemical name (wt%)** \_\_\_\_\_  
 No

**Special Precautions for User:** None.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** None.

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#### SECTION 15 REGULATORY INFORMATION

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**EU Information:**

**Classification(EC1272/2008):** See SECTION 2.

**Hazardous Component(s):** None.

**Classification(67/548/EEC or 1999/45EC):**

**Symbol & Indication:** Not required.

**R-Phrase:** Not required.

**S-Phrase:** Not required.

**Dangerous Component(s):** None.

**Special Precautions under 67/548/EEC Article 8 and 13 or 1999/45/EC Annex V:** Not required.

**Specific Provisions in Relation to Protection of Man or the Environment:**

**76/769/EEC:** Not regulated.

**(EC)2037/2000:** Not regulated.

**(EC)304/2003:** Not regulated.

**(EC)1907/2006 Title VII:** Not regulated.

**(EC)1907/2006 Title VIII:** Not regulated.

**Others:** None.

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**USA Information:**

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**Information on the Label under OSHA HCS:**

Signal Word(s): Not required.

Hazard Warning: Not required.

Safety Advice: Not required.

Hazardous Component(s): Not required.

**SARA Title III, 313:**

Chemical Name: None. Wt%:

**California Proposition 65:**

Chemical Name: None. Wt%:

**SECTION 16 OTHER INFORMATION****Other Information:**

<b>NFPA Safety Information:</b>	Health Hazard : 1	National Fire Protection Association rating identifies
	Flammability : 1	hazards during a fire emergency.
	Instability : 0	NFPA Hazard Rating:
	Special Hazard : None.	Minimal: 0, Slight: 1, Moderate: 2, Serious: 3, Severe: 4

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**Literature Reference:**

- U.S. Department of Labor, 29CFR Part 1910.
- U.S. Environmental Protection Agency, 40CFR Part 372.
- U.S. Consumer Product Safety Commission, 16CFR Part 1500.
- Safe Drinking Water and Toxic Enforcement Act of 1986.
- Title III of the Superfund Amendments and Reauthorization Act of 1986.
- ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices.
- U.S. Department of Health and Human Services National Toxicology Program, Annual Report on Carcinogens.
- World Health Organization International Agency for Research on Cancer, IARC Monographs on the Evaluation on the Carcinogenic Risk of Chemicals to Humans.
- DFG, List of MAK and BAT Values.
- EU Directive 76/769/EEC, 67/548/EEC, 88/379/EEC, 1999/45/EC and their amendments.
- EU Regulation (EC)3093/94, (EEC)2455/92,(EC)1907/2006,(EC)1272/2008 and their amendments.

**Abbreviations:**

EU: European Union.

OSHA PEL: PEL (Permissible Exposure Limit) under Occupational Safety and Health Administration.

ACGIH TLV: TLV (Threshold Limit Value) under American Conference of Governmental Industrial Hygienists.

**EU ILV: Indicative Limit Values for Occupational Exposure under EU Directive 91/322/EEC, 2000/39/EC and 2006/15/EC.**

**DFG MAK: MAK (Maximale Arbeitsplatz-Konzentration) under Deutsche Forschungsgemeinschaft.**

**PBT:Persistent,Bioaccumulative and Toxic.**

**vPvB:very Persistent and very Bioaccumulative.**

**NFPA: National Fire Protection Association**

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