

SAFETY DATA SHEET

PRODUCT NAME **Base oil**

Data of issue 11/6/2018

Date of revision 11/6/2018

1. Identification of the substance or mixture and the supplier

Product name	Base oil
SDS No.	GHS-0093
Name of supplier	Kyoto Electronics Manufacturing Co., Ltd.
Address	68 Ninodan-cho, Shinden, Kisshoin, Minami-ku, Kyoto, Japan
Division	Quality Assurance Department
Phone	+81-75-691-4121
Fax	+81-75-691-4127

2. Hazard identification

OSHA/HCS status	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
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Classification of the substance or mixture	Not classified.
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GHS label elements

Signal word	No signal word.
Hazard statements	No known significant effects or critical hazards.

Precautionary statements

Prevention	Not applicable.
Response	Not applicable.
Storage	Not applicable.
Disposal	Not applicable.

Hazards not otherwise classified	None known.
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3. Composition/Information on ingredients

Substance/mixture Polymer
 Chemical name Dec-1-ene, homopolymer hydrogenated
 Other means of identification Dec-1-ene, homopolymer hydrogenated

CAS number/other identifiers

CAS number 68037-01-4

Ingredient name	Other names	%	CAS number
Dec-1-ene, homopolymer hydrogenated		100	68037-01-4

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

4. First-aid measures

Description of necessary first aid measures

Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	No known significant effects or critical hazards.
Inhalation	No known significant effects or critical hazards.
Skin contact	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards

Over-exposure signs/symptoms

Eye contact	No specific data.
Inhalation	No specific data.
Skin contact	No specific data.
Ingestion	No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	No specific treatment.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media In case of fire, use water spray (fog), foam, dry chemical or CO₂.

Unsuitable extinguishing media Do not use water jet.

Specific hazards arising from the chemical In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products Decomposition products may include the following materials: carbon oxides (CO, CO₂)

Special protective actions for fire-fighters Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Remark May be combustible at high temperature.

Remark This material is not explosive as defined by established regulatory criteria.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
For emergency responders	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For nonemergency personnel".
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill	Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7. Handling and storage

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

See also Section 8 for additional information on hygiene measures

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

8. Exposure controls/Personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Dec-1-ene, homopolymer hydrogenated	None.

Appropriate engineering controls Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.
 Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with sideshields.

Skin protection

Hand protection Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
 Recommended: Nitrile gloves.
 The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Body protection	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Color	Colorless. (<0.5 ASTMD1500)
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Melting point	Pour point: -63°C (-81.4°F)
Boiling point	Not available.
Flash point	Closed cup: 245°C (473°F) [Pensky-Martens.]
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Lower and upper explosive (flammable) limits	Not available.
Vapor pressure	<0.017 kPa (<0.13 mm Hg) [room temperature]
Vapor density	Not available.
Relative density	0.83
Solubility	Insoluble in the following materials: cold water.
Solubility in water	Not available.
Partition coefficient: noctanol/water	>10
Auto-ignition temperature	387°C (728.6°F)
Decomposition temperature	Not available.
Viscosity	Kinematic (40°C (104°F)): 30.7 mm ² /s (30.7 cSt)

10. Stability and reactivity

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	Keep away from heat and direct sunlight. Avoid inhalation of vapor, spray or mist.
Incompatible materials	Strong oxidizing materials
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Dec-1-ene, homopolymer	LC50 Inhalation Dusts and mists	Rat	>5.2 mg/l	4 hours
hydrogenated	LD50 Oral	Rat	>5000 mg/kg	

Mutagenicity

Conclusion/Summary No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a mutagen.

Carcinogenicity

Conclusion/Summary No component of this product at levels greater than 0.1% is identified as a carcinogen by ACGIH, the International Agency for Research on Cancer (IARC) or the European Commission (EC).

Reproductive toxicity

Conclusion/Summary No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary No component of this product at levels greater than 0.1% is classified by established regulatory criteria as teratogenic or embryotoxic.

Information on the likely routes of exposure Not available.

Potential acute health effects

Eye contact No known significant effects or critical hazards.
 Inhalation No known significant effects or critical hazards.
 Skin contact No known significant effects or critical hazards.
 Ingestion No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact No specific data.
 Inhalation No specific data.
 Skin contact No specific data.
 Ingestion No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

General No known significant effects or critical hazards.
 Carcinogenicity No known significant effects or critical hazards.
 Mutagenicity No known significant effects or critical hazards.

Teratogenicity No known significant effects or critical hazards.
 Developmental effects No known significant effects or critical hazards.
 Fertility effects No known significant effects or critical hazards.

12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Dec-1-ene, homopolymer hydrogenated	EL50 >1000 mg/l WAF	Daphnia	48 hours
	LL50 >1000 mg/l	Fish	96 hours
	NOEC 2 mg/l	Micro-organism	28 days
	NOELR 1000 mg/l WAF	Aquatic plants	72 hours
	NOELR 125 mg/l WAF	Daphnia	21 days

Conclusion/Summary Not available.

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Not available.				

Conclusion/Summary Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Dec-1-ene, homopolymer hydrogenated	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Dec-1-ene, homopolymer hydrogenated	>10	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) No specific data.
 Mobility This product is not likely to move rapidly with surface or groundwater flows because of its low water solubility. This product is not likely to volatilize rapidly into the air because of its low vapor pressure.

Other adverse effects No known significant effects or critical hazards.

13. Disposal considerations

Disposal methods The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. Transport information

Not classified as hazardous for transport (DOT, IMDG, IATA)

Special precautions for user Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code	Proper shipping name	Polyolefin (molecular weight 300+)
	Ship type	2
	Pollution category	Y

15. Regulatory information

U.S. Federal regulations	United States inventory (TSCA 8b): This material is listed or exempted.
Clean Air Act Section 112	Not listed
(b) Hazardous Air Pollutants (HAPs)	
Clean Air Act Section 602	Not listed
Class I Substances	
Clean Air Act Section 602	Not listed
Class II Substances	
DEA List I Chemicals	Not listed
(Precursor Chemicals)	
DEA List II Chemicals	Not listed
(Essential Chemicals)	
<u>SARA 302/304</u>	
<u>Composition/information on ingredients</u>	
No products were found.	
SARA 304 RQ	Not applicable.
<u>SARA 311/312</u>	
Classification	Not applicable.
<u>Composition/information on ingredients</u>	
No products were found.	
<u>SARA 313</u>	Not applicable.
<u>State regulations</u>	
Massachusetts	This material is not listed.
New York	This material is not listed.
New Jersey	This material is not listed.
Pennsylvania	This material is not listed.
<u>International regulations</u>	
<u>Chemical Weapon Convention List</u>	Not listed.
<u>Schedules I, II & III Chemicals</u>	
<u>Montreal Protocol (Annexes A, B, C, E)</u>	Not listed.
<u>Stockholm Convention on Persistent Organic</u>	Not listed.
<u>Pollutants</u>	
<u>Rotterdam Convention on Prior Informed</u>	Not listed.
<u>Consent (PIC)</u>	
<u>UNECE Aarhus Protocol on POPs and Heavy</u>	Not listed.
<u>Metals</u>	

Inventory list

Australia	This material is listed or exempted.
Canada	This material is listed or exempted.
China	This material is listed or exempted.
Europe	Exempted.
Japan	Japan inventory (ENCS): This material is listed or exempted. Japan inventory (ISHL): This material is listed or exempted.
Malaysia	This material is listed or exempted.
New Zealand	This material is listed or exempted.
Philippines	This material is listed or exempted.
Republic of Korea	This material is listed or exempted.
Taiwan	This material is listed or exempted.
Turkey	This material is listed or exempted.

16. Other information

Hazardous Material Information System (U.S.A.)

Health	0
Flammability	0
Physical hazards	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Not classified.	

History

Date of issue/Date of revision	03/02/2018
Date of previous issue	06/06/2016
Version	5.01

Key to abbreviations

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973

as modified by the Protocol of 1978. ("Marpol" = marine pollution)

References

UN = United Nations

HCS (U.S.A.)- Hazard Communication Standard

International transport regulations

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.