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SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBIL CENTAUR XHP 221
Product Description: Base Oil and Additives
Product Code: 2015A020K010, 641969-80
Recommended Use: Grease

COMPANY IDENTIFICATION

Supplier: EMG Lubricants GodoKaisha
1-8-15, Kohnan, Minato-ku
Tokyo 〒 108-8005 Japan

Supplier General Contact

0120-016-313

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M) SDS Section 15).

Contains: CALCIUM SULPHONATE May produce an allergic reaction.

Other hazard information:

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks

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which may vary from person to person.

SECTION 3	COMPOSITION / INFORMATION ON INGREDIENTS
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Chemical Substance or Mixture Identification

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
BENZENAMINE, AR-NONYL-N-(NONYL PHENYL)-	36878-20-3	1 - < 5%	None
BENZENE SULFONIC ACIDS, C10-16 ALKYL DERIVS., CA SALTS	68584-23-6	1 - < 5%	H317
BENZENESULFONIC ACID, MONO-C16-24-ALKYL DERIVS. CALCIUM SALTS	70024-69-0	0.1 - < 1%	H317
BENZOIC ACID, 2-HYDROXY-, MONO-C>13 ALKYL DERIVS., CALCIUM SALTS (2:1)	83846-43-9	0.1 - < 1%	H315, H319 (2A)
CALCIUM DODECYLBENZENE SULFONATE	26264-06-2	1 - < 5%	H302, H315, H318, H401, H412
CARBONIC ACID, CALCIUM SALT (1:1)	471-34-1	10 - < 20%	None
SULFONIC ACIDS, PETROLEUM, CALCIUM SALTS	61789-86-4	1 - < 5%	None

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

SECTION 4	FIRST AID MEASURES
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INHALATION

Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

NOTE TO PHYSICIAN

None

SECTION 5	FIRE FIGHTING MEASURES
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EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Nitrogen oxides, Oxides of carbon, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >180° C (356° F) [EST. FOR OIL, ASTM D-92 (COC)]

Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D

Autoignition Temperature: N/D

SECTION 6

ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

PERSONAL PRECAUTIONS

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is

recommended.

SPILL MANAGEMENT

Land Spill: Scrape up spilled material with shovels into a suitable container for recycle or disposal.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Skim from surface.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7	HANDLING AND STORAGE
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HANDLING (Technical Measures; Safety Handling Precautions; Contact Avoidance)

Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is not a static accumulator.

STORAGE (Safe Storage Conditions; Safe Containers and Packaging Materials)

Do not store in open or unlabelled containers.

SECTION 8	EXPOSURE CONTROLS / PERSONAL PROTECTION
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EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
CARBONIC ACID, CALCIUM SALT (1:1)	Respirable dust.	TWA	2 mg/m ³			Japan OELs - JSOH
CARBONIC ACID, CALCIUM SALT (1:1)	Total dust.	TWA	8 mg/m ³			Japan OELs - JSOH

Biological limits

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No biological limits allocated.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No protection is ordinarily required under normal conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use. Nitrile

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after

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handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

BASIC PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Color: Tan

Odor: Characteristic

Melting Point: N/D

Freezing Point: N/D

Initial Boiling Point / Range: > 316° C (600° F)

Flammability: Ignitable

Lower and Upper Explosion Limit/Flammability Limit: Lower: N/D Upper: N/D

Flash Point [Method]: >180° C (356° F) [EST. FOR OIL, ASTM D-92 (COC)]

Autoignition Temperature: N/D

Decomposition Temperature: N/D

pH: N/A

Kinematic Viscosity: N/A

Solubility in Water: Negligible

Partition Coefficient: n-Octanol/water (log value): N/D

Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 ° C

Relative Density (at 15 ° C): 1

Relative Vapor Density (Air = 1): N/D

Particle Characteristics: Median Size: N/A Size Range: N/A

OTHER INFORMATION

Form: Semi-fluid

Evaporation Rate (n-butyl acetate = 1): N/D

DMSO Extract (mineral oil only), IP-346: < 3 %wt

Oxidizing Properties: See Hazards Identification Section.

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NOTE: Most physical properties above are for the oil component in the material.

SECTION 10	STABILITY AND REACTIVITY
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REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11	TOXICOLOGICAL INFORMATION
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INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.

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Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY
CALCIUM DODECYLBENZENE SULFONATE	Oral Lethality: LD50 1300 mg/kg (Rat)

OTHER INFORMATION

For the product itself:

Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

See Section 16 for a description of sources for reference data.

IARC Classification:

The following ingredients are cited on the lists below: None.

—REGULATORY LISTS SEARCHED—

1 = IARC 1

2 = IARC 2A

3 = IARC 2B

SECTION 12

ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

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ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATIVE POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

Hazard to the Ozone Layer

Not Applicable

See Section 16 for a description of sources for reference data.

SECTION 13	DISPOSAL CONSIDERATIONS
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Information on Safe and Environmentally Desirable Disposal or Recycling of Chemicals, Contaminated Containers and Packaging

DISPOSAL METHODS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

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SECTION 14	TRANSPORT INFORMATION
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LAND – Precautionary Transportation Measures & Conditions:

Do not co-load together with dangerous substances categorized in Fire Cat. 1 and/or 6, and/or High Pressure Gases.

NOTE: Comply with applicable laws and regulations.

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15	REGULATORY INFORMATION
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This material is not considered hazardous according to the Classification of Chemicals based on Globally Harmonized System of Classification and Labelling of Chemicals (GHS) (JIS Z 7252-2019).

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Listed or exempt from listing/notification on the following chemical inventories : AIIC, DSL, ENCS, IEGSC, ISHL, KEGI, PICCS, TCSI, TSCA

National Laws and Regulations:

Chemical Substances Control Law: Existing Chemicals

Chemical Substances Control Law substances:

Chemical Name	Referenced List	ENCS Number
BENZENESULFONIC ACID, MONO-C16-24-ALKYL DERIVS. CALCIUM SALTS	Priority Assessment	3-1884, 3-1906, 3-1949
CALCIUM DODECYLBENZENE SULFONATE	Priority Assessment	3-1884, 3-1906, 3-1949

Fire Service Law: Not Dangerous Substances

ISHL: Notified Substances

ISHL: Labeling Substances

Maritime Pollution Prevention Law: Regulated

Mariners Labour Safety and Health Regulation: Regulated

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Poisonous and Deleterious Substances Control Law (PDSCL): Not Regulated
 Pollutant Release and Transfer Register (PRTR): Regulated
 Sewage Water Law: Mineral oil (5mg/l max.)
 Waste Treatment Law : Controlled Industrial Waste
 Water Pollution Control Law: Effluent Regulation (5mg/l max.)

JAPANESE COMPOSITION INFORMATION

Industrial Safety and Health Law: Article 57, Chemical substances to be labelled:

Name	Concentration
Mineral Oil	70-80 wt%

Industrial Safety and Health Law: Article 57-2, Chemical Substances to be notified:

Name	ISHL Ordinance Number	Concentration
Mineral Oil	168	70-80 %weight

ISHL Enforcement Order, Table 3-1, Manufacturing Permit Chemical Substances: None.

PRTR Class 1 Designated Chemical Substances:

Name	Number On List	Concentration
CALCIUM DODECYLBENZENE SULFONATE	30	1.0 wt%

PRTR Class 2 Designated Chemical Substances: None.

PDSCL Chemical Substances: None.

SECTION 16 OTHER INFORMATION

SOURCE OF REFERENCE MATERIAL: Sources of information used in preparing this SDS included one or more of the following: results from in house or supplier toxicology studies, CONCAWE Product Dossiers, publications from other trade associations, such as the EU Hydrocarbon Solvents REACH Consortium, U.S. HPV Program Robust Summaries, the EU IUCLID Data Base, U.S. NTP publications, and other sources, as appropriate.

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):

H302: Harmful if swallowed; Acute Tox Oral, Cat 4

H315: Causes skin irritation; Skin Corr/Irritation, Cat 2

H317: May cause allergic skin reaction; Skin Sensitization, Cat 1

H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1

H319(2A): Causes serious eye irritation; Serious Eye Damage/Irr, Cat 2A

H401: Toxic to aquatic life; Acute Env Tox, Cat 2

H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3

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THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

- Composition: Component Table information was modified.
- Composition: PRTRCLASS1 Table information was modified.
- Section 01: Company Mailing Address information was deleted.
- Section 01: Company Mailing Address information was modified.
- Section 09: Decomposition Temp C(F) information was added.
- Section 09: Decomposition Temp C(F) information was deleted.
- Section 09: Flammability (Solid, Gas) information was deleted.
- Section 09: Flammability information was added.
- Section 09: Flammable Limits – LEL information was added.
- Section 09: Flammable Limits – UEL information was added.
- Section 09: Particle Characteristics information was added.
- Section 09: Particle Range information was added.
- Section 09: Physical State information was deleted.
- Section 10: Reactivity information was added.
- Section 11 Substance Toxicology table information was added.
- Section 11: Aspiration Conclusion information was added.
- Section 11: Aspiration Test Data information was added.
- Section 11: Carcinogen Conclusion information was added.
- Section 11: Carcinogen Test Comment information was added.
- Section 11: Carcinogen Test Data information was added.
- Section 11: Dermal Irritation Test Data information was added.
- Section 11: Dermal Irritation Test Data information was deleted.
- Section 11: Dermal Lethality Test Data information was added.
- Section 11: Dermal Lethality Test Data information was deleted.
- Section 11: Eye Irritation Test Data information was added.
- Section 11: Eye Irritation Test Data information was deleted.
- Section 11: Inhalation Lethality Test Data information was added.
- Section 11: Inhalation Lethality Test Data information was deleted.
- Section 11: Lactation Conclusion information was added.
- Section 11: Lactation Test Data information was added.
- Section 11: Mutagen Conclusion information was added.
- Section 11: Mutagen Test Comment information was added.
- Section 11: Mutagen Test Data information was added.
- Section 11: Oral Lethality Test Data information was added.
- Section 11: Oral Lethality Test Data information was deleted.
- Section 11: Other Health Effects information was added.
- Section 11: Reproductive Conclusion information was added.
- Section 11: Reproductive Test Comment information was added.
- Section 11: Reproductive Test Data information was added.
- Section 11: Respiratory Sensitization Conclusion information was added.
- Section 11: Respiratory Sensitization Test Data information was added.
- Section 11: Skin Sensitization Conclusion information was added.
- Section 11: Skin Sensitization Test Comment information was added.
- Section 11: Skin Sensitization Test Data information was added.
- Section 11: Target Organ Toxicity – Repeat Conclusion information was added.

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Section 11: Target Organ Toxicity – Repeat Test Comment information was added.
Section 11: Target Organ Toxicity – Repeat Test Data information was added.
Section 11: Target Organ Toxicity – Single Conclusion information was added.
Section 11: Target Organ Toxicity – Single Test Data information was added.
Section 15: Japan Hazard Statement information was modified.
Section 15: National Chemical Inventory Listing information was modified.
Section 16: HCode Key information was modified.

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MHC: 0, 0, 0, 0, 0, 0

PPEC: A

DGN: 7076527XJP (1021832)
