NOTICE: Recently Summit discontinued the Wind Turbine Cleaner and replaced it with the Varnasolv product. We include both in these instructions for your convenience:

Gearbox Cleanout Procedure

CONTENTS

Sludgy Oil

Attached please find the **MSDS sheets** and **Instructions (Product Data Sheets)** for:

1. Varnasolv HV. (Equipment Varnish Cleaner)
2. Summit Wind Turbine Cleaner (Varnish and Sludge Gearbox Cleaner)

Read the Clean-Out Procedure Instructions on the Product Data Sheets before proceeding.

Deviate from the Instructions in the following ways:

1. Do Not Drain the Oil Level down to add the Cleaner.
2. Add Cleaner per the Chart Below.

Machine Size	Approximate Gear Box Volume		Add Cleaner Volume	
	(***gallon***)	(***liter***)	(***pints***)	(***ml***)
34	3/4	2.85	3/4	360
43/44	1	3.79	1	380
53/54	1 1/2	5.68	1 1/2	710
63/64	2	7.57	2	950
74	4	15.14	4	1890

Then, per the Clean-Out Procedure Instructions Run the Elevator Machine for at least 48 hours. The goal is to get the oil hot so that it will properly drain.

Drain the oil while hot and replace with fresh oil per the Hollister-Whitney Lubrication Instructions Procedure. If Hot Oil will not drain, refer to the chart above and add a second application of the cleaner to the Gearbox, and Run the Elevator Machine for another 24 hours. If Hot Oil will not drain at this point, contact Hollister-Whitney for assistance.

The Hollister-Whitney Lubrication Instructions Procedure, **Bulletin #1150**, is found at http://www.hollisterwhitney.com/techsupport/Bulletins/ .

Getting Oil and/or Gearbox Cleaner from H-W

1) Machines must be checked by Qualified Mechanic.

2) Change oil at the normal recommended time. Procedure for this is **Bulletin #1150**, found at http://www.hollisterwhitney.com/techsupport/Bulletins/

3) If oil is coagulated, sludgy, etc.

- **a)** Get Contract Serial # (A#) from machine data tag and contact H-W.
- **b)** With the Contract Serial #, Contact H-W Sales (sales@hwec.com) for New Oil and/or Gearbox Cleaner.
- **c)** **Customer Issues PO in writing to H-W Sales** for new oil, cleaner, etc. Customer must reference Contract Serial #.
- **d)** New Oil, Cleaner, etc. is sent to the customer.

Concerning Mobil SHC 636

Hollister-Whitney now recommends the use of Mobil SHC 636 (described below). It is fully compatible with the mineral based EP 8, ISO Grade 680 gear oils used in the past.

Hollister-Whitney has used the Mobil Synthetic SHC636 for the better part of 25 years. In the past it was always delegated to those jobs that were of "higher" capacity, or had "inefficient" gearing... and would be shipped in the machine from Hollister-Whitney if that determination had been made at the time of Machine Assembly.

The "standard" oil used at Hollister-Whitney used to be a mineral based "normal" 680 viscosity gear oil. Many applications of this oil were successfully converted to SHC 636 after the fact in the field simply by the customer draining the old 680 oil out and replacing it with the SHC 636.

Hollister-Whitney no longer recommends any normal mineral based 680 gear oils.

The SHC 636 is NON-GLYCOL based, and is fully compatible with the normal mineral based 680 gear oils.

February 27, 2018

Ottsen Oil Company
1041 19th St. SW
Cedar Rapids, IA 52404

RE: Summit Wind Turbine Cleaner

To Whom It May Concern:

Summit Brand Wind Turbine Cleaner has been replaced with the Summit Brand Varnasolv HV (high viscosity). Product Data Sheet is available if needed.

Should you have any questions, please contact me or your Summit Sales Manager.

Best regards,

Dan Myrick
Chief Technology Officer
Kluber Lubrication/Summit Brand

Klüber Lubrication NA LP
Locations
32 Industrial Drive, Londonderry, NH 03053
9010 County Road 2120 [PO Box 131359]
Tyler, TX 75713

903 561 2220 Phone
603 581 4376 Fax
800 749 5823 Toll-free
www.klsummit.com
info@klsummit.com

Product Data Sheet

December 9, 2014

Klüber Lubrication NA LP • P.O. Box 131359 • Tyler, CR 2120, Texas 75713, Phone 903.534.8021 • Fax 903.581.4376

LUBRICATION SYSTEM CLEANER

VARNASOLV Series

Equipment Varnish Cleaner

The use of petroleum lubricants, mainly automatic transmission fluid (ATF), in rotary screw compressors, rotary vane compressors and other high temperature equipment, results in varnish and carbon formation. The varnish and carbon deposited throughout the equipment can cause many serious operational problems, resulting in excessively high maintenance costs.

Varnasolv can help reduce the problems caused by varnish and carbon. **Varnasolv** should be added to the existing lubricant to remove and suspend varnish while the equipment is running. Using **Varnasolv** eliminates the need for disassembling the equipment for cleaning. For maximum benefit, use V**arnasolv** before each lubricant change. **Varnasolv** is NSF Registered HX-2

Additional applications for **Varnasolv** include cleaning hydraulic systems, gearboxes, and high temperature chains. Varnasolv can also be used for cleaning Heat Transfer systems with temperatures up to 400°F.

Varnasolv HV is blended to a higher viscosity for minimal dilution when used in gear box lubricants.

HOW TO USE VARNASOLV

Cleaning Hydrocarbon Deposits from Equipment

Initial Clean-Out Method

Add one gallon of **Varnasolv** concentrate to each ten gallons of oil in the unit, first draining enough oil to allow adding the Varnasolv. Continue to run the equipment for 20 to 40 hours, allowing the treated oil to disperse and suspend the varnish. To avoid redepositing the suspended contaminants, drain the oil while warm and replace filters. Refill with new oil.

*Packing: **Varnasolv** is available in cases (six gallons), five gallon pails or 55 gallon drums.*

Physical Properties

PRODUCTS	Varnasolv	Varnasolv HV
Viscosity:		
@ 40°C, cSt	32.0	207.59
@ 100°C, cSt	5.23	29.02
Viscosity Index	95	180
Specific Gravity, 60°F	0.9738	0.9472
Density, lbs/gal	8.1098	7.8883
Flash Point, °F (°C)	480(249)	500(260)
Fire Point, °F (°C)	505(263)	535(279)
Pour Point, °F (°C)	0(-18)	21(-6)
NSF Registered, °F (°C)	HX-2	-

Shelf Life: Product shelf life is 5 years from the date of manufacture, after which the product should be recertified prior to use.

SUMMIT

SAFETY DATA SHEET

Issue Date 29-Jul-2016 **Revision Date** 29-Jul-2016 **Version** 2

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name Varnasolv HV

Other means of identification
Product code: 340378
Synonyms None

Recommended use of the chemical and restrictions on use
Recommended Use Lubricant.
Uses advised against No information available

Details of the supplier of the safety data sheet
Supplier Address
Klüber Lubrication NA LP
9010 County Road 2120
Tyler, Texas 75707
Phone: (903) 534-8021
Fax: (903) 581-4376

Emergency telephone number
Emergency Telephone CHEMTREC: 1-800-424-9300; INTERNATIONAL: (703) 527-3887

2. HAZARD IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious eye damage/eye irritation	Category 2A

Label Elements

EMERGENCY OVERVIEW

Signal word
Warning

Hazard statements
Causes serious eye irritation

Appearance Oil **Physical state** Liquid **Odor** Mild

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear eye/face protection
Eyes IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention

Hazards not otherwise classified (HNOC)
Other information
• Causes mild skin irritation
• Harmful to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Components	CAS-No	Weight %	Trade Secret
Secondary alcohol ethoxylate	84133-50-6	10 - 40%	*

4. FIRST AID MEASURES

First aid measures

Eye contact: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Call a physician immediately.

Skin contact: Wash off immediately with soap and plenty of water. Remove and wash contaminated clothing before re-use. If skin irritation persists, call a physician.

Inhalation: Move to fresh air. If symptoms persist, call a physician.

Ingestion: Call a physician immediately. Do not induce vomiting without medical advice.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:
Carbon dioxide (CO2). Dry chemical. Water spray mist or foam.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapors. Water may be used to cool closed containers. Collect contaminated fire extinguishing water separately. Do not allow to enter drains or surface water.

Explosion data

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Special protective equipment for firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions: Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition.

Environmental precautions

Environmental precautions: Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up: Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Spilling onto the container`s outside will make container slippery. Avoid contact with eyes and skin. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers dry and tightly closed to avoid moisture absorption and contamination

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines Contains mineral oil, vegetable oil, and/or synthetic oil. Under conditions which may generate mists, observe the OSHA PEL of 5 mg/m³, ACGIH STEL of 10 mg/m³.

Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Respiratory protection: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Hand protection:	Nitrile rubber
Eye protection:	Safety glasses
Skin and body protection:	Usual safety precautions while handling the product will provide adequate protection against this potential effect
General Hygiene Considerations	Avoid contact with skin, eyes and clothing

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Liquid
Appearance Oil **Odor** Mild **Color** Light yellow **Odor threshold** No information available

Property	Values	Remarks • Method	Property	Values
Melting point/freezing point	No information available		**pH**	Not applicable
Flash point	260 °C / 500 °F	Cleveland Open Cup	**Boiling point / boiling range**	> 260 °C / 500 °F
Flammability (solid, gas)	No information available		**Evaporation rate**	No information available
Upper flammability limit:	No information available		**Flammability Limit in Air**	
Vapor pressure	No information available		**Lower flammability limit:**	No information available
Specific Gravity	< 1.0		**Vapor density**	No information available
Solubility in other solvents	No information available		**Water solubility**	Slightly Emulsifiable
Autoignition temperature	No information available		**Partition coefficient**	No information available
Kinematic viscosity	No information available		**Decomposition temperature**	No information available
			Dynamic viscosity	No information available

Explosive properties	No information available
Oxidizing properties	No information available

Other information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity
Not applicable

Chemical stability

Stability Stable under normal conditions

Possibility of Hazardous Reactions

Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.

Conditions to avoid

Conditions to avoid Exposure to elevated temperatures can cause product to decompose.

Hazardous Decomposition Products

Hazardous Decomposition Products Incomplete combustion may produce small amounts of carbon oxides

Incompatible materials

Incompatible materials Strong acids and strong bases. Strong oxidising agents

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information Product does not present an acute toxicity hazard based on known or supplied information

Eye contact Moderately irritating to the eyes.

Skin contact Prolonged contact may cause redness and irritation.

Inhalation Vapors and/or aerosols which may be formed at elevated temperatures may be irritating to eyes and respiratory tract.

Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Components	Oral LD50	Dermal LD50	Inhalation LC50
Secondary alcohol ethoxylate - 84133-50-6	= 2100 mg/kg (Rat)	-	-

Information on toxicological effects

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Serious eye damage/eye irritation Irritating to eyes.
Sensitization No sensitization responses were observed.
Mutagenic effects: Did not show mutagenic or teratogenic effects in animal experiments.
Carcinogenicity This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Reproductive toxicity This product does not contain any known or suspected reproductive hazards.
STOT - Single Exposure None under normal use conditions.
STOT - Repeated Exposure None under normal use conditions.
Aspiration hazard Not applicable.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 12784 mg/kg
ATEmix (dermal) 8660 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects

0.5% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Secondary alcohol ethoxylate - 84133-50-6	
Algae/aquatic plants	-

Fish	3.2: 96 h Pimephales promelas mg/L LC50
Crustacea	3.2: 48 h water flea mg/L EC50

Persistence and degradability
Readily biodegradable, according to appropriate OECD test. (based on components).

Bioaccumulation
No information available.

Mobility
The product is insoluble and floats on water.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

14. TRANSPORT INFORMATION

DOT Not Regulated by any means of transportation

15. REGULATORY INFORMATION

International Inventories

TSCA:	Listed in TSCA
DSL:	All of the components in this product are listed in DSL
EINECS/ELINCS	This product complies with EINECS/ELINCS
CHINA:	This product complies with China IECSC.
KECL:	This product complies with Korea KECL.
PICCS:	This product does not comply with Philippines PICCS.
AICS:	All the constituents of this material are listed on the Australian AICS

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

State Regulations (RTK)

California Proposition 65
This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

U.S. EPA Label Information
EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

Nfpa:
Health: 2
Flammability: 1
Instability 0
NFPA/HMIS * for Carc, Muta, Tera, Specific Organ *
HMIS health rating:
Health: 2
Flammability: 1
Physical hazards 0
Personal protection B

Issue Date	29-Jul-2016
Revision Date	29-Jul-2016

Revision Note
Not applicable
Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

July 21, 2010
P.O. Box 131359 • Tyler, Texas 75713, Phone 903.534.8021 • Fax 903.581.4376

Product Data Sheet

LUBRICANT ADDITIVE

Wind Turbine Cleaner

Varnish and Sludge Cleaner

Wind turbine gearbox lubricants perform in difficult environments. Shock loading, extended oil drain service intervals, temperature and humidity extremes can rapidly break down the best formulated lubricants, producing varnish and sludge as natural decomposition by-products. Summit's **Wind Turbine Cleaner** is the most effective lubricating system conditioner available to clean and remove these performance robbing deposits.

Clean-Out Procedure:

Simply replace 10% of the existing oil charge with an equal amount of Summit **Wind Turbine Cleaner**, and then operate normally for a minimum of 48 hours. As the warm oil is drained from the gearbox reservoir, the varnish, sludge, and carbonaceous gunk in suspension will be removed. If installed, check oil filters and change after the cleaning procedure. A thorough periodic cleaning of the gearbox lubricating system before a scheduled oil change ensures peak lubricant performance and restores the system to like-new condition.

Summit's **Wind Turbine Cleaner** is compatible with all commonly used lubricants, mineral or synthetic; and, all common elastomers, paints and plastics. Please consult your Summit representative for more information.

PHYSICAL PROPERTIES	
Viscosity, 40ºC, cSt	78
Specific Gravity, 60ºF	0.985
Density, 60ºF	8.20 lbs/gal
Flash Point	193ºC / 380ºF

SUMMIT® INDUSTRIAL PRODUCTS

MATERIAL SAFETY DATA SHEET

Print date: 26-Aug-2010 *Revision Number:* 0 *Revision date:*

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product Name: Wind Turbine Cleaner
Article Code: 340281
Synonyms: No information available
Chemical characterisation: No data is available on the product itself.

Supplier:
Summit Industrial Products
9010 County Road 2120
Tyler, Texas 75707
Phone: (903) 534-8021
Fax: (903) 581-4376

Emergency telephone number CHEMTREC: 1-800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No	ACGIH (TWA mg/m³):	OSHA (TWA mg/m³):
Glycols, polyethylene, mono(1,1,3,3-tetramethyl)phenyl] ether	9036-19-5	None	None

3. HAZARDS IDENTIFICATION

Properties affecting health: Harmful by inhalation
Harmful in contact with skin

Principle routes of exposure: Skin.

Skin contact: Contact causes skin irritation.

Eye contact: Contact with eyes may cause irritation.

Inhalation: May cause irritation of respiratory tract.

Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea Risk of product entering the lungs on vomiting after ingestion

4. FIRST AID MEASURES

General advice: If symptoms persist, call a physician.

Skin contact: Wash off immediately with soap and plenty of water. Remove and wash contaminated clothing before re-use. If skin irritation persists, call a physician.

Inhalation: Move to fresh air. If symptoms persist, call a physician.

Eye contact: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If symptoms persist, call a physician.

Ingestion: Drink 1 or 2 glasses of water. Do not induce vomiting. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:
Carbon dioxide (CO2), Dry chemical, Water spray mist or foam

Extinguishing media which must not be used for safety reasons:
No information available..

Special protective equipment for firefighters:
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Specific hazards: No information available.
Unusual hazards: No hazards resulting from the material as supplied
Specific methods: In the event of fire, cool tanks with water spray

Flash point: >335 (°F)
Method: Cleveland Open Cup
Autoignition temperature: No information available

Flammability Limits in Air:
Lower No information available
Upper No information available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment

Environmental precautions: Do not flush into surface water or sanitary sewer system.

Methods for cleaning up: Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.

7. HANDLING AND STORAGE

Handling
Technical measures/precautions: Use only in area provided with appropriate exhaust ventilation
Safe handling advice: Spilling onto the container`s outside will make container slippery.

Storage
Technical measures/storage conditions: Keep containers dry and tightly closed to avoid moisture absorption and contamination.
Incompatible products: No special restrictions on storage with other products.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure:
Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment
Respiratory protection: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.
Hand protection: Nitrile rubber.

Skin and body protection: Usual safety precautions while handling the product will provide adequate protection against this potential effect.

Eye protection: Safety glasses

Hygiene measures: Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid	**Appearance:**	Liquid
Color:	Clear	**Odor:**	Mild
Specific gravity:	<1.0	**Boiling point/range**	>500 (°F)
Evaporation rate:	Not determined	**Vapor density:**	Not determined
Vapor pressure:	< 0.035 mm Hg @ 300 °F	**Solubility:**	Insoluble.

10. STABILITY AND REACTIVITY

Stability:	Stable
Polymerization:	Hazardous polymerisation does not occur.
Hazardous decomposition products:	Carbon oxides
Materials to avoid:	Oxidising agents (strong).
Conditions to avoid:	Stable at normal conditions

11. TOXICOLOGICAL INFORMATION

Acute toxicity No data available

12. ECOLOGICAL INFORMATION

Mobility: No information available.

Bioaccumulative potential: No information available.

Ecotoxicity effects: No data available.

Aquatic toxicity: No information available

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: In accordance with local and national regulations.

Contaminated packaging: Empty containers should be taken for local recycling, recovery or waste disposal

14. TRANSPORT INFORMATION

DOT

Proper shipping name: Not Applicable

TDG (Canada)

Proper shipping name: Not Applicable

IMO / IMDG

14. TRANSPORT INFORMATION

Proper shipping name: Not Applicable

ICAO

Proper shipping name: Not Applicable

IATA

Proper shipping name: Not Applicable

15. REGULATORY INFORMATION

International Inventories

PICCS: This product complies w ith phil:
TSCA: Listed in TSCA
DSL: All of the components in this product are listed in DSL
ENCS: This product does not comply w ith JPENCS
CHINA: This product complies w ith china:
AICS: All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).
KECL: This product complies w ith korea:
EINECS/ELINCS This product complies w ith EINECS/ELINCS

U.S. Regulations:

Sara (311, 312) hazard class:

Canada

WHMIS hazard class:
D2B Toxic materials

WHMIS graphic:

16. OTHER INFORMATION

NFPA	**Health:**	1	**Flammability:**	1	**Instability:**	0	
HMIS	**Health:**	1	**Flammability:**	1	**Physical Hazard:**		0

NFPA symbol:

Reason for revision: Not applicable
Prepared by: Health & Safety

The information and recommendations contained herein are based upon tests believed to be reliable. However, Summit does not guarantee their accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage maybe required. Summit assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBIL SHC 636**
Product Description: Synthetic Base Stocks and Additives
Product Code: 201560500580, 602995-00, 970921
Intended Use: Circulating/gear oil

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
3225 GALLOWS RD.
FAIRFAX, VA. 22037 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300
ExxonMobil Transportation No.	281-834-3296
Product Technical Information	800-662-4525, 800-947-9147
MSDS Internet Address	http://www.exxon.com, http://www.mobil.com

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

No Reportable Hazardous Substance(s) or Complex Substance(s).

SECTION 3 HAZARDS IDENTIFICATION

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

POTENTIAL HEALTH EFFECTS

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

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

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 which may vary from person to person.

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use

adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

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.

SECTION 5 FIRE FIGHTING MEASURES

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: Smoke, Fume, Aldehydes, Sulfur oxides, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES

Flash Point [Method]: >210°C (410°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
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. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

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.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

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

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The container choice, for example storage vessel, may effect static accumulation and dissipation. Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m³ - ACGIH TLV (inhalable fraction), 5 mg/m³ - OSHA PEL.

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 special requirements under ordinary 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.

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 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.

GENERAL INFORMATION

Physical State: Liquid
Color: Orange
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density: 0.867
Flash Point [Method]: >210°C (410°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F)
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 680 cSt (680 mm2/sec) at 40 °C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -30°C (-22°F)
Decomposition Temperature: N/D

SECTION 10 STABILITY AND REACTIVITY

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.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks
Inhalation	
Toxicity (Rat): LC50 > 5000 mg/m3	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.

Ingestion	
Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials.
Eye	
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

CHRONIC/OTHER EFFECTS

Contains:

Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not sensitizing in test animals and humans.

Additional information is available by request.

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

--REGULATORY LISTS SEARCHED--

1 = NTP CARC
2 = NTP SUS
3 = IARC 1
4 = IARC 2A
5 = IARC 2B
6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.
Material -- Not expected to demonstrate chronic toxicity 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.

SECTION 13 DISPOSAL CONSIDERATIONS

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. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrositivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

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.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

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

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

Complies with the following national/regional chemical inventory requirements:: TSCA
Special Cases:

Inventory	Status
AICS	Restrictions Apply
ELINCS	Restrictions Apply
KECI	Restrictions Apply

EPCRA: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
PHENOL, 4,4-METHYLENEBIS(2,6-BIS(1,1-DIMETHYLETHYL)-	118-82-1	5

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

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

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Revision Changes:
Section 09: Boiling Point C(F) was modified.
Section 09: Flash Point C(F) was modified.
Section 09: n-Octanol/Water Partition Coefficient was modified.
Section 08: Comply with applicable regulations phrase was modified.
Section 01: Product Intended Use was modified.
Section 09: Vapor Pressure was modified.
Section 09: Flash Point C(F) was modified.
Section 09: Viscosity was modified.
Section 15: National Chemical Inventory Listing was modified.
Section 15: Special Cases Table was modified.
Section 09: Vapor Pressure was deleted.

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