

Technical Bulletin



Stang Industrial Products
714-556-0222
www.stangindustrial.com

Technical Bulletin #: 100
Part #: 999999-1
Description: OIL, SHELL TELLUS PLUS 32
TB Description: Specifications & MSDS

Shell Tellus® PLUS Oils

Shell Tellus® Plus Oils are available in seven ISO viscosity grades for use in virtually all machine lubrication and hydraulic fluid applications. The grades range from ISO VG 22 to 220. Tellus Plus Oils are premium products formulated with an effective anti-wear compound compatible with copper bearing components for hydraulic or circulating systems requiring high quality anti-wear oils, such as those recommended by hydraulic pump and machine tool manufacturers. They are formulated with severely hydroprocessed Group II base oils with superior thermal and oxidative stability.

Code	Product Grade
65206	Shell Tellus® PLUS Oils 22
65208	Shell Tellus® PLUS Oils 32
65209	Shell Tellus® PLUS Oils 46
65211	Shell Tellus® PLUS Oils 68
65214	Shell Tellus® PLUS Oils 100
65561	Shell Tellus® PLUS Oils 150
65555	Shell Tellus® PLUS Oils 220

SHELL TELLUS® PLUS OILS Premium quality circulating and anti-wear hydraulic oils

Product Description

Shell Tellus® Plus Oils are available in seven ISO viscosity grades for use in virtually all machine lubrication and hydraulic fluid applications. The grades range from ISO VG 22 to 220. **Shell Tellus Plus Oils** are premium products formulated with an effective anti-wear compound compatible with copper bearing components for hydraulic or circulating systems requiring high quality anti-wear oils, such as those recommended by hydraulic pump and machine tool manufacturers. They are formulated with severely hydroprocessed Group II base oils with superior thermal and oxidative stability.

Applications

- hydraulic oil systems, particularly those utilizing positive displacement, high speed/pressure pumps
- circulating oil systems
- general machine lubrication

Features/Benefits

- outstanding protection against wear, rust and corrosion
- extended system life
- excellent oxidation resistance over long service periods, even with low make-up rates
- superior demulsibility
- rapid air separation
- long-term hydrolytic stability
- long-term thermal stability
- excellent filterability

Approvals and Recommendations

- Denison HF-O
- GM LS-2
- Vickers M-2950-S (Mobile) and I-286-S (Industrial)
- Cincinnati Machine

C-M SPECIFICATION SHELL PRODUCT

P-68 **Tellus Plus 32**

P-69 **Tellus Plus 68**

P-70 **Tellus Plus 46**

Typical Properties of Shell Tellus Plus Oils

	Test Method	ISO Viscosity Grade						
		22	32	46	68	100	150	220
Product Code		65206	65208	65209	65211	65214	65561	65555
Viscosity:								
@ 40°C, cSt	D 445	22.0	32.0	46.0	68.0	100	152	220
@ 100°C, cSt	D 445	4.4	5.4	6.8	8.7	11.0	14.3	18.1
@ 100°F, SUS	D 88	115	165	237	352	522	802	1167
@ 210°F, SUS	D 88	41.1	44.4	49	55.5	64	77	93
Viscosity Index	D 2270	109	102	102	99	94	90	90
Gravity, °API	D 1298	33.6	32.2	29.5	28.5	27.5	26.6	26.0
Flash Point, COC, °F	D 92	380	410	440	460	470	470	485
Pour Point, °F	D 97	-35	-35	-25	-25	-20	0	0
RBOT, minutes	D 2272	320	320	312	310	300	287	280
Copper Corrosion	D 130	1a	1a	1a	1a	1a	1a	1a
Emulsion Test, 130°F, 30 minutes max	D 1401	Pass	Pass	Pass	Pass	Pass(1)	Pass(1)	Pass(1)
Rust Test	D 665B	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Turbine Oil Stability Test, hrs	D 943	5000+	5000+	5000+	5000+	4000+	2500	2000

(1) Emulsion @180°F

Handling & Safety Information

For information on the safe handling and use of this product, refer to its Material Safety Data Sheet at <http://www.equivashellmsds.com>. For more information and availability, call 1+800-782-7852 or visit the World Wide Web: <http://www.shell-lubricants.com/>.

MATERIAL SAFETY DATA SHEET
Revision Date: 06/04/2003

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: Tellus® Plus Oil 32
MSDS NUMBER: 60050E - 13
PRODUCT CODE(S): 5061177, 5061180, 5061290, 65208

MANUFACTURER ADDRESS: SOPUS Products, P.O. Box 4427, Houston, TX. 77210-4427

TELEPHONE NUMBERS

Spill Information: (877) 242-7400
Health Information: (877) 504-9351
MSDS Assistance Number: (877) 276-7285

SECTION 2 PRODUCT/INGREDIENTS

CAS#	CONCENTRATION	INGREDIENTS
		Hydraulic Oil
	Mixture 90 - 98.99 % weight	Highly refined petroleum oils
	Mixture 1 - 4.99 % weight	Additives (contains <1% zinc)

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance & Odor: Amber, clear liquid. Mild odor.
Health Hazards: No known immediate health hazards. High-pressure injection under the skin may cause serious damage.
Physical Hazards: No known physical hazards.
NFPA Rating (Health, Fire, Reactivity): 0, 1, 0
Hazard Rating: Least - 0 Slight - 1 Moderate - 2 High - 3
Extreme - 4

Inhalation:

Inhalation of vapors (generated at high temperatures only) or oil mist may cause mild irritation of the nose, throat, and respiratory tract.

Eye Irritation:

Lubricating oils are generally considered no more than minimally irritating to the eyes.

Skin Contact:

May cause slight irritation of the skin. If irritation occurs, a temporary burning sensation and minor redness and/or swelling may result. Release of the material during high-pressure applications may result in injection under the skin causing possible extensive tissue damage which is difficult to heal. Other adverse effects not expected from brief skin contact.

Ingestion:

Lubricating oils are generally no more than slightly toxic if swallowed.

Other Health Effects:

Material may release hydrogen sulfide (H₂S), a highly toxic and extremely flammable gas, when heated to 180 Degrees F or higher. H₂S can cause irritation of the eyes and respiratory tract, headache, dizziness, nausea, vomiting, diarrhea, and pulmonary edema. The odor ("rotten egg") threshold is 0.02 ppm. Do not depend on sense of smell for warning; H₂S rapidly deadens the sense of smell.

Signs and Symptoms:

Irritation as noted above. Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection.

Aggravated Medical Conditions:

Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to this product.

For additional health information, refer to section 11.

SECTION 4 FIRST AID MEASURES

Inhalation:

If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting or unresponsive, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility.

Skin:

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Remove contaminated clothing and shoes and wipe excess from skin. Flush skin with water, then wash with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned. If material is injected under the skin, transport to the nearest medical facility for additional treatment. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.

Eye:

Flush with water. If irritation occurs, get medical attention.

Ingestion:

Do not induce vomiting. In general, no treatment is necessary unless large quantities of product are ingested. However, get medical attention. Have victim rinse mouth out with water, then drink sips of water to remove taste from mouth. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

Note to Physician:

In general, emesis induction is unnecessary in high viscosity, low volatility products such as oils and greases.

SECTION 5 FIRE FIGHTING MEASURES

Flash Point [Method]: >400 °F/>204.44 °C [Cleveland Open Cup]

Extinguishing Media:

Material will float and can be re-ignited on surface of water. Use water fog, alcohol foam, dry chemical or carbon dioxide (CO₂) to extinguish flames. Do not use a direct stream of water.

Fire Fighting Instructions:

Material will not burn unless preheated. Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure, NIOSH approved, self-contained breathing apparatus.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures:

May burn although not readily ignitable.

Wear appropriate personal protective equipment when cleaning up spills. Refer to Section 8.

Spill Management:

FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

Place in container for proper disposal.

Reporting:

CERCLA: Product is covered by EPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) petroleum exclusion. Releases to air, land, or water are not reportable under CERCLA (Superfund).

CWA: This product is an oil as defined under Section 311 of EPA's Clean Water Act (CWA). Spills into or leading to surface waters that cause a sheen must be reported to the National Response Center, 1-800-424-8802.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures:

Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet. Launder contaminated clothing before reuse. Properly dispose of contaminated leather articles such as shoes or belts that cannot be decontaminated. Avoid heat, open flames, including pilot lights, and strong oxidizing agents. Use explosion-proof ventilation to prevent vapor accumulation. Ground all handling equipment to prevent sparking.

Material may release hydrogen sulfide (H₂S), a highly toxic and extremely flammable gas, when heated to 180 Degrees F or higher. H₂S may collect in the headspace of the container.

Storage:

Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures.

Container Warnings:

Keep containers closed when not in use. Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Oil mist, mineral ACGIH TLV TWA: 5 mg/m³ STEL: 10 mg/m³

Oil mist, mineral OSHA PEL TWA: 5 mg/m³

Hydrogen sulfide ACGIH - TLV TWA: 10 ppm STEL: 15 ppm
Hydrogen sulfide OSHA - PEL_IS TWA: 10 ppm STEL: 15 ppm
Hydrogen sulfide Thermal > 180 Degrees F.

EXPOSURE CONTROLS

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Eye washes and showers for emergency use.

PERSONAL PROTECTION

Personal protective equipment (PPE) selections vary based on potential exposure conditions such as handling practices, concentration and ventilation. Information on the selection of eye, skin and respiratory protection for use with this material is provided below.

Eye Protection:

Chemical Goggles - If liquid contact is likely., or Safety glasses with side shields

Skin Protection:

Use protective clothing which is chemically resistant to this material. Selection of protective clothing depends on potential exposure conditions and may include gloves, boots, suits and other items. The selection(s) should take into account such factors as job task, type of exposure and durability requirements.

Published literature, test data and/or glove and clothing manufacturers indicate the best protection is provided by: Neoprene, or Nitrile Rubber

Respiratory Protection:

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, an approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

Types of respirator(s) to be considered in the selection process include:

For Mist: Air Purifying, R or P style NIOSH approved respirator.

For Vapors: Air Purifying, R or P style prefilter & organic cartridge,

NIOSH approved respirator. Self-contained breathing apparatus for use in environments with unknown concentrations or emergency situations.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance & Odor: Amber, clear liquid. Mild odor.

Substance Chemical Family: Lubricants

Appearance: Amber, clear liquid.

Flash Point: > 400 °F [Cleveland Open Cup]

Pour Point: -5 °F - -20 °F

Specific Gravity: 0.87 - 0.88

Viscosity: > 25 cSt @ 40 °C

SECTION 10 REACTIVITY AND STABILITY

Stability: Material is stable under normal conditions.

Conditions to Avoid: Avoid heat and open flames.

Materials to Avoid: Avoid contact with strong oxidizing agents.

Hazardous Decomposition Products: Thermal decomposition products are highly dependent on combustion conditions. A complex mixture of airborne solids, liquids and gases will evolve when this material undergoes pyrolysis or combustion. Aldehydes, Carbon Monoxide, Carbon Dioxide, Hydrogen Sulfide, Ketones and other unidentified organic compounds may be formed upon combustion.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute Toxicity

Dermal LD50 >5.0 g/kg(Rabbit) OSHA: Non-Toxic Based on component(s)

Oral LD50 >5.0 g/kg(Rat) OSHA: Non-Toxic Based on component(s)

Carcinogenicity Classification

Hydraulic Oil

NTP: No IARC: Not Reviewed ACGIH: No OSHA: No

SECTION 12 ECOLOGICAL INFORMATION

Environmental Impact Summary: There is no ecological data available for this product. However, this product is an oil. It is persistent and does not readily biodegrade. However, it does not bioaccumulate.

SECTION 13 DISPOSAL CONSIDERATIONS

RCRA Information:

Under RCRA, it is the responsibility of the user of the material to determine, at the time of the disposal, whether the material meets RCRA criteria for hazardous waste. This is because material uses, transformations, mixtures, processes, etc. may affect the classification. Refer to the latest EPA, state and local regulations regarding proper disposal.

SECTION 14 TRANSPORT INFORMATION

US Department of Transportation Classification

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

Oil: This product is an oil under 49CFR (DOT) Part 130. If shipped by rail or highway in a tank with a capacity of 3500 gallons or more, it is subject to these requirements. Mixtures or solutions containing 10% or more of this product may also be subject to this rule.

International Air Transport Association

Not regulated under IATA rules.

International Maritime Organization Classification

Not regulated under International Maritime Organization rules.

SECTION 15 REGULATORY INFORMATION

FEDERAL REGULATORY STATUS

OSHA Classification:

Product is hazardous according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200, because it carries the occupational exposure limit for mineral oil mist.

Ozone Depleting Substances (40 CFR 82 Clean Air Act): This material does not contain nor was it directly manufactured with any Class I or Class II ozone depleting substances.

Superfund Amendment & Reauthorization Act (SARA) Title III:

There are no components in this product on the SARA 302 list.

SARA Hazard Categories (311/312):

Immediate Health:NO Delayed Health:NO Fire:NO Pressure:NO Reactivity:NO

SARA Toxic Release Inventory (TRI) (313):

There are no components in this product on the SARA 313 list.

Toxic Substances Control Act (TSCA) Status:

All component(s) of this material is(are) listed on the EPA/TSCA Inventory of Chemical Substances.

Other Chemical Inventories:

Component(s) of this material is (are) listed on the Australian AICS, Canadian DSL, European EINECS, Korean Inventory,

State Regulation

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

SECTION 16 OTHER INFORMATION

Revision#: 13

Revision Date: 06/04/2003

Revisions since last change (discussion): This Material Safety Data Sheet (MSDS) has been reviewed to fully comply with the guidance contained in the ANSI MSDS standard (ANSI Z400.1-1998). We encourage you to take the opportunity to read the MSDS and review the information contained therein.

SECTION 17 LABEL INFORMATION

READ AND UNDERSTAND MATERIAL SAFETY DATA SHEET BEFORE HANDLING OR DISPOSING OF PRODUCT. THIS LABEL COMPLIES WITH THE REQUIREMENTS OF THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200) FOR USE IN THE WORKPLACE. THIS LABEL IS NOT INTENDED TO BE USED WITH PACKAGING INTENDED FOR SALE TO CONSUMERS AND MAY NOT CONFORM WITH THE REQUIREMENTS OF THE CONSUMER PRODUCT SAFETY ACT OR OTHER RELATED REGULATORY REQUIREMENTS.

PRODUCT CODE(S): 5061177, 5061180, 5061290, 65208

Tellus® Plus Oil 32

ATTENTION!

PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE OIL ACNE OR DERMATITIS.
HIGH-PRESSURE INJECTION UNDER SKIN MAY CAUSE SERIOUS DAMAGE.

Precautionary Measures: Avoid prolonged or repeated contact with eyes, skin and clothing. Avoid breathing of vapors, fumes, or mist. Use only with adequate ventilation. Wash thoroughly after handling.

FIRST AID

Inhalation: If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting or unresponsive, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility. Skin Contact: Remove contaminated clothing and shoes and wipe excess from skin. Flush skin with water, then wash with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned. If material is injected under the skin, transport to the nearest medical facility for additional treatment. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment. Eye Contact: Flush with water. If irritation occurs, get medical attention. Ingestion: Do not induce vomiting. In general, no treatment is necessary unless large quantities of product are ingested. However, get

medical attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Have victim rinse mouth out with water, then drink sips of water to remove taste from mouth.

FIRE

In case of fire, Use water fog, 'alcohol foam', dry chemical or carbon dioxide (CO₂) to extinguish flames. Do not use a direct stream of water. Material will float and can be re-ignited on surface of water.

SPILL OR LEAK

Dike and contain spill.

FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

CONTAINS: Highly refined petroleum oils, Mixture; Additives (contains <1% zinc), Mixture

NFPA Rating (Health, Fire, Reactivity): 0, 1, 0

TRANSPORTATION

US Department of Transportation Classification This material is not subject to DOT regulations under 49 CFR Parts 171-180.

Oil: This product is an oil under 49CFR (DOT) Part 130. If shipped by rail or highway in a tank with a capacity of 3500 gallons or more, it is subject to these requirements. Mixtures or solutions containing 10% or more of this product may also be subject to this rule.

CAUTION: Misuse of empty containers can be hazardous. Empty containers can be hazardous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers might cause fire, explosion or toxic fumes from residues. Do not pressurize or expose to open flames or heat. Keep container closed and drum bungs in place.

Name and Address

SOPUS Products
P.O. Box 4427
Houston, TX 77210-4427

ADMINISTRATIVE INFORMATION

MANUFACTURER ADDRESS: SOPUS Products, P.O. Box 4427, Houston, TX.
77210-4427

Company Product Stewardship & Regulatory Compliance Contact: Timothy W Childs
Phone Number: (713) 241-1524

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