BRAVA IGNIS SAE 5W-20 - SP, SN PLUS

SECTION 1: IDENTIFICATION

1.1 GHS Product identifier: BRAVA IGNIS SAE 5W-20 - SP, SN PLUS

Other means of identification:

Non-applicable

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Lubricant

Uses advised against: All uses not specified in this section or in section 7.3

1.3 Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:

OLEIN REFINERY CORP
Carr. 3 Km. 90.4 BO Aguacate
00767 Yabucoa - PR
Phone: 7872662103
lab@oleincorp.com

1.4 Emergency phone number:

SECTION 2: HAZARD(S) IDENTIFICATION

2.1 Classification of the substance or mixture:

29 CFR 1910.1200:

Classification of this product has been carried out in accordance with paragraph (d) of § 1910.1200.

Asp. Tox. 1: Aspiration hazard, Category 1, H304
Carc. 1B: Carcinogenicity, Category 1B, H350
Eye Irrit. 2A: Eye irritation, Category 2A, H319

2.2 Label elements:

29 CFR 1910.1200:

Danger

Hazard statements:

Asp. Tox. 1: H304 - May be fatal if swallowed and enters airways.
Carc. 1B: H350 - May cause cancer.
Eye Irrit. 2A: H319 - Causes serious eye irritation.

Precautionary statements:

P101: If medical advice is needed, have product container or label at hand.
P102: Keep out of reach of children.
P201: Obtain special instructions before use.
P264: Wash thoroughly after use.
P280: Wear protective gloves/face protection/protective clothing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P501: Dispose of the contents/containers according to the local, state and federal regulations.

Substances that contribute to the classification

Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC; Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based; Distillates (petroleum), hydrotreated heavy paraffinic; Distillates (petroleum), solvent-dewaxed heavy paraffinic

2.3 Hazards not otherwise classified (HNOC):

Non-applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances:

- CONTINUED ON NEXT PAGE -

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

Non-applicable

3.2 Mixtures:

Chemical description: Mineral oil

Components:

Remaining components are non-hazardous and/or present at amounts below reportable limits. The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.Therefore, in accordance with Appendix D to § 1910.1200, the product contains:

Identification	Chemical name/Classification	Concentration
CAS: 64742-54-7	**Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC** Asp. Tox. 1: H304 - Danger	**50 - <75 %**
CAS: 72623-87-1	**Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based** Carc. 1B: H350 - Danger	**10 - <25 %**
CAS: 64742-54-7	**Distillates (petroleum), hydrotreated heavy paraffinic** Carc. 1B: H350 - Danger	**<10 %**
CAS: 2215-35-2	**zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)** Eye Dam. 1: H318; Skin Irrit. 2: H315 - Danger	**<10 %**
CAS: 64742-65-0	**Distillates (petroleum), solvent-dewaxed heavy paraffinic** Carc. 1B: H350 - Danger	**<10 %**

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

SECTION 4: FIRST-AID MEASURES

4.1 Description of necessary measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:

This product does not contain substances classified as hazardous for inhalation, however, in case of symptoms of intoxication remove the person affected from the exposure area and provide with fresh air. Seek medical attention if the symptoms get worse or persist.

By skin contact:

This product is not classified as hazardous when in contact with the skin. However, in case of skin contact it is recommended to remove contaminated clothes and shoes, rinse the skin or shower the person affected if necessary thoroughly with cold water and neutral soap. In case of serious reaction consult a doctor.

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Request medical assistance immediately, showing the SDS of this product. Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. In the case of loss of consciousness do not administrate anything orally unless supervised by a doctor. Rinse out the mouth and throat, as they may have been affected during ingestion. Keep the person affected at rest.

4.2 Most important symptoms/effects, acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

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

Non-applicable

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable (and unsuitable) extinguishing media:

Suitable extinguishing media:

If possible use polyvalent powder fire extinguishers (ABC powder), alternatively use foam or carbon dioxide extinguishers (CO_2).

- CONTINUED ON NEXT PAGE -

SECTION 5: FIRE-FIGHTING MEASURES (continued)

Unsuitable extinguishing media:

IT IS RECOMMENDED NOT to use full jet water as an extinguishing agent.

5.2 Specific hazards arising from the chemical:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Special protective equipment and precautions for fire-fighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

Additional provisions:

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Only properly trained personnel should be involved in firefighting. Evacuate nonessential personnel from the fire area. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Evacuate the area and keep out those who do not have protection.

For emergency responders:

See section 8.

6.2 Environmental precautions:

This product is not classified as hazardous to the environment. Keep product away from drains, surface and underground water.

6.3 Methods and materials for containment and cleaning up:

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.- Precautions for safe manipulation

Comply with the current standards 29 CFR 1910 Occupational Safety and Health Standards. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations to prevent ergonomic and toxicological risks

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

7.2 Conditions for safe storage, including any incompatibilities:

A.- Technical measures for storage

Minimum Temp.: 41 ºF

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SECTION 7: HANDLING AND STORAGE (continued)

Maximum Temp.: 86 ºF

Maximum time: 12 Months

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be monitored in the workplace:

Oils: PEL-TWA= 5mg/m3

8.2 Appropriate engineering controls:

A.- Individual protection measures, such as personal protective equipment

As a preventative measure it is recommended to use basic Personal Protection Equipment. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation, the information on clothing performance must be combined with professional judgment, and a clear understanding of the clothing application, to provide the best protection to the worker. All chemical protective clothing use must be based on a hazard assessment to determine the risks for exposure to chemicals and other hazards. Conduct hazard assessments in accordance with 29 CFR 1910.132.

B.- Respiratory protection

Pictogram	PPE	Remarks
 Mandatory respiratory tract protection	Filter mask for gases and vapours	Replace when there is a taste or smell of the contaminant inside the face mask. If the contaminant comes with warnings it is recommended to use isolation equipment. Use respirator in accordance with manufacturer´s use limitations and OSHA standard 1910.134 (29CFR)

C.- Specific protection for the hands

Pictogram	PPE	Remarks
 Mandatory hand protection	NON-disposable chemical protective gloves	The Breakthrough Time indicated by the manufacturer must exceed the period during which the product is being used. Do not use protective creams after the product has come into contact with skin. Use gloves in accordance with manufacturer´s use limitations and OSHA standard 1910.138 (29CFR)

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.

D.- Ocular and facial protection

Pictogram	PPE	Remarks
 Mandatory face protection	Face shield	Clean daily and disinfect periodically according to the manufacturer´s instructions. Use if there is a risk of splashing. Use this PPE in accordance with manufacturer´s use limitations and OSHA standard 1910.133 (29CFR)

E.- Bodily protection

Pictogram	PPE	Remarks
 Mandatory complete body protection	Disposable clothing for protection against chemical risks	For professional use only. Clean periodically according to the manufacturer´s instructions.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Pictogram	PPE	Remarks
 Mandatory foot protection	Safety footwear for protection against chemical risk	Replace boots at any sign of deterioration. Use foot protection in accordance with manufacturer´s use limitations and OSHA standard 1910.136 (29CFR)

F.- Additional emergency measures

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

Environmental exposure controls:

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

National volatile organic compound emission standards (40 CFR Part 59):

V.O.C. (Subpart C - Consumer): 0 % weight

V.O.C. (Coatings) at 68 ºF: 0 kg/m³ (0 g/L)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 68 ºF:	Liquid
Appearance:	Oily
Color:	Gold
Odor:	Characteristic
Odour threshold:	Non-applicable *

Volatility:

Boiling point at atmospheric pressure:	639 ºF
Vapour pressure at 68 ºF:	Non-applicable *
Vapour pressure at 122 ºF:	<300000 Pa (300 kPa)
Evaporation rate at 68 ºF:	Non-applicable *

Product description:

Density at 68 ºF:	875.3 kg/m³
Relative density at 68 ºF:	0.875
Dynamic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 104 ºF:	<20.5 mm²/s
Concentration:	Non-applicable *
pH:	Non-applicable *
Vapour density at 68 ºF:	Non-applicable *
Partition coefficient n-octanol/water 68 ºF:	Non-applicable *
Solubility in water at 68 ºF:	Non-applicable *
Solubility properties:	Non-applicable *
Decomposition temperature:	Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Melting point/freezing point:	Non-applicable *
Flammability:	
Flash Point:	Non Flammable (>199.4 ºF)
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	550 ºF
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *
Particle characteristics:	
Median equivalent diameter:	Non-applicable

9.2 Other information:

Information with regard to physical hazard classes:

Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *
Corrosive to metals:	Non-applicable *
Heat of combustion:	Non-applicable *
Aerosols-total percentage (by mass) of flammable components:	Non-applicable *
Other safety characteristics:	
Surface tension at 68 ºF:	Non-applicable *
Refraction index:	Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

10.2 Chemical stability:

Chemically stable under the conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Not applicable	Not applicable	Avoid alkalis or strong bases

10.6 Hazardous decomposition products:

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO2), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

The experimental information related to the toxicological properties of the product itself is not available

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SECTION 11: TOXICOLOGICAL INFORMATION (continued)

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

A- Ingestion (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, however it does contain substances classified as dangerous for this effect. For more information see section 3.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for skin contact. For more information see section 3.
- Contact with the eyes: Produces eye damage after contact.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- Carcinogenicity: Exposure to this product can cause cancer. For more specific information on the possible health effects see section 2.
  IARC: Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC (3); Distillates (petroleum), hydrotreated heavy paraffinic (3); Distillates (petroleum), solvent-dewaxed heavy paraffinic (3)
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensitising effects. For more information see section 3.
- Cutaneous: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

H- Aspiration hazard:

The consumption of a considerable dose can cause pulmonary damage.

Other information:

Non-applicable

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS: 72623-87-1	LD50 oral	5100 mg/kg	Rat
	LD50 dermal	5100 mg/kg	Rabbit
	LC50 inhalation	Non-applicable	
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) CAS: 2215-35-2	LD50 oral	2230 mg/kg	Rat
	LD50 dermal	Non-applicable	
	LC50 inhalation	Non-applicable	

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SECTION 12: ECOLOGICAL INFORMATION

The experimental information related to the eco-toxicological properties of the product itself is not available

Contains phosphates. Excessive discharge may cause eutrophication.

12.1 Ecotoxicity (aquatic and terrestrial, where available):

Acute toxicity:

Identification	Concentration		Species	Genus
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	LC50	5000 mg/L (96 h)	Oncorhynchus mykiss	Fish
CAS: 72623-87-1	EC50	1000 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	1000 mg/L (96 h)	Scenedesmus subspicatus	Algae

Chronic toxicity:

Identification	Concentration		Species	Genus
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)	NOEC	Non-applicable		
CAS: 2215-35-2	NOEC	0.4 mg/L	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Identification	Degradability		Biodegradability	
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)	BOD5	Non-applicable	Concentration	Non-applicable
CAS: 2215-35-2	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	1.5 %

12.3 Bioaccumulative potential:

Identification	Bioaccumulation potential	
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	BCF	
CAS: 72623-87-1	Pow Log	3.9
	Potential	

12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)	Koc	Non-applicable	Henry	Non-applicable
CAS: 2215-35-2	Conclusion	Non-applicable	Dry soil	Non-applicable
	Surface tension	5.98E-2 N/m (71.96 ºF)	Moist soil	Non-applicable

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations. In case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See epigraph 6.2.

Regulations related to waste management:

Legislation related to waste management:

40 CFR Part 261- IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

SECTION 14: TRANSPORT INFORMATION

This product is not regulated for transport.

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SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

SARA Title III - Toxic Chemical Release Inventory Reporting (Section 313): zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)
California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986): Non-applicable
The Toxic Substances Control Act (TSCA) : Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC ; Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based ; Distillates (petroleum), hydrotreated heavy paraffinic ; zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) ; Distillates (petroleum), solvent-dewaxed heavy paraffinic
Massachusetts RTK - Substance List: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
New Jersey Worker and Community Right-to-Know Act: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
New York RTK - Substance list: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
Pennsylvania Worker and Community Right-to-Know Law: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
CANADA-Domestic Substances List (DSL): Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC ; Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based ; Distillates (petroleum), hydrotreated heavy paraffinic ; zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) ; Distillates (petroleum), solvent-dewaxed heavy paraffinic
CANADA-Non-Domestic Substances List (NDSL): Non-applicable
NTP (National Toxicology Program): Non-applicable
Minnesota - Hazardous substances ERTK: Non-applicable
Rhode Island - Hazardous substances RTK: Non-applicable
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096): Non-applicable
Hazardous Air Pollutants (Clean Air Act): Non-applicable
Hazardous substances release notification under CERCLA sections 102-103 (40 CFR Part 302): Non-applicable

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation:

Take into consideration other applicable federal, state, and local laws and local regulations.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Appendix d to §1910.1200 - Safety data sheets

Texts of the legislative phrases mentioned in section 2:

H350: May cause cancer.
H304: May be fatal if swallowed and enters airways.
H319: Causes serious eye irritation.

Texts of the legislative phrases mentioned in section 3:

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

29 CFR 1910.1200:

Asp. Tox. 1: H304 - May be fatal if swallowed and enters airways.
Carc. 1B: H350 - May cause cancer.
Eye Dam. 1: H318 - Causes serious eye damage.
Skin Irrit. 2: H315 - Causes skin irritation.

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

Occupational Safety & Health Administration (OSHA).

Abbreviations and acronyms:

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SECTION 16: OTHER INFORMATION (continued)

IMDG: International maritime dangerous goods code
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
COD: Chemical Oxygen Demand
BOD5: 5-day biochemical oxygen demand
BCF: Bioconcentration factor
LD50: Lethal Dose 50
CL50: Lethal Concentration 50
EC50: Effective concentration 50
Log-POW: Octanol-water partition coefficient
Koc: Partition coefficient of organic carbon
IARC: International Agency for Research on Cancer

END OF SAFETY DATA SHEET

BRAVA IGNIS SAE 5W-30 - SP, SN PLUS

SECTION 1: IDENTIFICATION

1.1 GHS Product identifier: BRAVA IGNIS SAE 5W-30 - SP, SN PLUS

Other means of identification:

Non-applicable

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Lubricant

Uses advised against: All uses not specified in this section or in section 7.3

1.3 Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:

OLEIN REFINERY CORP
Carr. 3 Km. 90.4 BO Aguacate
00767 Yabucoa - PR
Phone: 7872662103
lab@oleincorp.com

1.4 Emergency phone number:

SECTION 2: HAZARD(S) IDENTIFICATION

2.1 Classification of the substance or mixture:

29 CFR 1910.1200:

Classification of this product has been carried out in accordance with paragraph (d) of § 1910.1200.

Asp. Tox. 1: Aspiration hazard, Category 1, H304
Carc. 1B: Carcinogenicity, Category 1B, H350
Eye Irrit. 2A: Eye irritation, Category 2A, H319

2.2 Label elements:

29 CFR 1910.1200:

Danger

Hazard statements:

Asp. Tox. 1: H304 - May be fatal if swallowed and enters airways.
Carc. 1B: H350 - May cause cancer.
Eye Irrit. 2A: H319 - Causes serious eye irritation.

Precautionary statements:

P101: If medical advice is needed, have product container or label at hand.
P102: Keep out of reach of children.
P201: Obtain special instructions before use.
P264: Wash thoroughly after use.
P280: Wear protective gloves/face protection/protective clothing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P501: Dispose of the contents/containers according to the local, state and federal regulations.

Substances that contribute to the classification

Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC; Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based; Distillates (petroleum), hydrotreated heavy paraffinic; Distillates (petroleum), solvent-dewaxed heavy paraffinic

2.3 Hazards not otherwise classified (HNOC):

Non-applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances:

- CONTINUED ON NEXT PAGE -

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

Non-applicable

3.2 Mixtures:

Chemical description: Mineral oil

Components:

Remaining components are non-hazardous and/or present at amounts below reportable limits. The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.Therefore, in accordance with Appendix D to § 1910.1200, the product contains:

Identification	Chemical name/Classification	Concentration
CAS: 64742-54-7	**Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC** Asp. Tox. 1: H304 - Danger	**50 - <75 %**
CAS: 72623-87-1	**Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based** Carc. 1B: H350 - Danger	**10 - <25 %**
CAS: 64742-54-7	**Distillates (petroleum), hydrotreated heavy paraffinic** Carc. 1B: H350 - Danger	**<10 %**
CAS: 2215-35-2	**zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)** Eye Dam. 1: H318; Skin Irrit. 2: H315 - Danger	**<10 %**
CAS: 64742-65-0	**Distillates (petroleum), solvent-dewaxed heavy paraffinic** Carc. 1B: H350 - Danger	**<10 %**

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

SECTION 4: FIRST-AID MEASURES

4.1 Description of necessary measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:

This product does not contain substances classified as hazardous for inhalation, however, in case of symptoms of intoxication remove the person affected from the exposure area and provide with fresh air. Seek medical attention if the symptoms get worse or persist.

By skin contact:

This product is not classified as hazardous when in contact with the skin. However, in case of skin contact it is recommended to remove contaminated clothes and shoes, rinse the skin or shower the person affected if necessary thoroughly with cold water and neutral soap. In case of serious reaction consult a doctor.

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Request medical assistance immediately, showing the SDS of this product. Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. In the case of loss of consciousness do not administrate anything orally unless supervised by a doctor. Rinse out the mouth and throat, as they may have been affected during ingestion. Keep the person affected at rest.

4.2 Most important symptoms/effects, acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

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

Non-applicable

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable (and unsuitable) extinguishing media:

Suitable extinguishing media:

If possible use polyvalent powder fire extinguishers (ABC powder), alternatively use foam or carbon dioxide extinguishers (CO_2).

- CONTINUED ON NEXT PAGE -

SECTION 5: FIRE-FIGHTING MEASURES (continued)

Unsuitable extinguishing media:

IT IS RECOMMENDED NOT to use full jet water as an extinguishing agent.

5.2 Specific hazards arising from the chemical:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Special protective equipment and precautions for fire-fighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

Additional provisions:

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Only properly trained personnel should be involved in firefighting. Evacuate nonessential personnel from the fire area. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Evacuate the area and keep out those who do not have protection.

For emergency responders:

See section 8.

6.2 Environmental precautions:

This product is not classified as hazardous to the environment. Keep product away from drains, surface and underground water.

6.3 Methods and materials for containment and cleaning up:

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.- Precautions for safe manipulation

Comply with the current standards 29 CFR 1910 Occupational Safety and Health Standards. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations to prevent ergonomic and toxicological risks

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

7.2 Conditions for safe storage, including any incompatibilities:

A.- Technical measures for storage

Minimum Temp.: 41 ºF

- CONTINUED ON NEXT PAGE -

SECTION 7: HANDLING AND STORAGE (continued)

Maximum Temp.: 86 ºF

Maximum time: 12 Months

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be monitored in the workplace:

Oils: PEL-TWA= 5mg/m3

8.2 Appropriate engineering controls:

A.- Individual protection measures, such as personal protective equipment

As a preventative measure it is recommended to use basic Personal Protection Equipment. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation, the information on clothing performance must be combined with professional judgment, and a clear understanding of the clothing application, to provide the best protection to the worker. All chemical protective clothing use must be based on a hazard assessment to determine the risks for exposure to chemicals and other hazards. Conduct hazard assessments in accordance with 29 CFR 1910.132.

B.- Respiratory protection

Pictogram	PPE	Remarks
 Mandatory respiratory tract protection	Filter mask for gases and vapours	Replace when there is a taste or smell of the contaminant inside the face mask. If the contaminant comes with warnings it is recommended to use isolation equipment. Use respirator in accordance with manufacturer´s use limitations and OSHA standard 1910.134 (29CFR)

C.- Specific protection for the hands

Pictogram	PPE	Remarks
 Mandatory hand protection	NON-disposable chemical protective gloves	The Breakthrough Time indicated by the manufacturer must exceed the period during which the product is being used. Do not use protective creams after the product has come into contact with skin. Use gloves in accordance with manufacturer´s use limitations and OSHA standard 1910.138 (29CFR)

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.

D.- Ocular and facial protection

Pictogram	PPE	Remarks
 Mandatory face protection	Face shield	Clean daily and disinfect periodically according to the manufacturer´s instructions. Use if there is a risk of splashing. Use this PPE in accordance with manufacturer´s use limitations and OSHA standard 1910.133 (29CFR)

E.- Bodily protection

Pictogram	PPE	Remarks
 Mandatory complete body protection	Disposable clothing for protection against chemical risks	For professional use only. Clean periodically according to the manufacturer´s instructions.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Pictogram	PPE	Remarks
 Mandatory foot protection	Safety footwear for protection against chemical risk	Replace boots at any sign of deterioration. Use foot protection in accordance with manufacturer´s use limitations and OSHA standard 1910.136 (29CFR)

F.- Additional emergency measures

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

Environmental exposure controls:

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

National volatile organic compound emission standards (40 CFR Part 59):

V.O.C. (Subpart C - Consumer): 0 % weight

V.O.C. (Coatings) at 68 ºF: 0 kg/m³ (0 g/L)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 68 ºF:	Liquid
Appearance:	Oily
Color:	Amber
Odor:	Lubricant
Odour threshold:	Non-applicable *

Volatility:

Boiling point at atmospheric pressure:	639 ºF
Vapour pressure at 68 ºF:	Non-applicable *
Vapour pressure at 122 ºF:	<300000 Pa (300 kPa)
Evaporation rate at 68 ºF:	Non-applicable *

Product description:

Density at 68 ºF:	885.6 kg/m³
Relative density at 68 ºF:	0.886
Dynamic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 104 ºF:	<20.5 mm²/s
Kinematic viscosity at 212 ºF:	11.2 mm²/s (ASTM D-445)
Concentration:	Non-applicable *
pH:	Non-applicable *
Vapour density at 68 ºF:	Non-applicable *
Partition coefficient n-octanol/water 68 ºF:	Non-applicable *
Solubility in water at 68 ºF:	Non-applicable *
Solubility properties:	Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.

- CONTINUED ON NEXT PAGE -

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *
Flammability:	
Flash Point:	Non Flammable (>199.4 ºF)
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	550 ºF
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *
Particle characteristics:	
Median equivalent diameter:	Non-applicable

9.2 Other information:

Information with regard to physical hazard classes:

Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *
Corrosive to metals:	Non-applicable *
Heat of combustion:	Non-applicable *
Aerosols-total percentage (by mass) of flammable components:	Non-applicable *
Other safety characteristics:	
Surface tension at 68 ºF:	Non-applicable *
Refraction index:	Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

10.2 Chemical stability:

Chemically stable under the conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Not applicable	Not applicable	Avoid alkalis or strong bases

10.6 Hazardous decomposition products:

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO2), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

The experimental information related to the toxicological properties of the product itself is not available

- CONTINUED ON NEXT PAGE -

SECTION 11: TOXICOLOGICAL INFORMATION (continued)

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

A- Ingestion (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, however it does contain substances classified as dangerous for this effect. For more information see section 3.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for skin contact. For more information see section 3.
- Contact with the eyes: Produces eye damage after contact.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- Carcinogenicity: Exposure to this product can cause cancer. For more specific information on the possible health effects see section 2.
  IARC: Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC (3); Distillates (petroleum), hydrotreated heavy paraffinic (3); Distillates (petroleum), solvent-dewaxed heavy paraffinic (3)
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensitising effects. For more information see section 3.
- Cutaneous: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

H- Aspiration hazard:

The consumption of a considerable dose can cause pulmonary damage.

Other information:

Non-applicable

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS: 72623-87-1	LD50 oral	5100 mg/kg	Rat
	LD50 dermal	5100 mg/kg	Rabbit
	LC50 inhalation	Non-applicable	
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) CAS: 2215-35-2	LD50 oral	2230 mg/kg	Rat
	LD50 dermal	Non-applicable	
	LC50 inhalation	Non-applicable	

- CONTINUED ON NEXT PAGE -

SECTION 12: ECOLOGICAL INFORMATION

The experimental information related to the eco-toxicological properties of the product itself is not available

Contains phosphates. Excessive discharge may cause eutrophication.

12.1 Ecotoxicity (aquatic and terrestrial, where available):

Acute toxicity:

Identification	Concentration		Species	Genus
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	LC50	5000 mg/L (96 h)	Oncorhynchus mykiss	Fish
CAS: 72623-87-1	EC50	1000 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	1000 mg/L (96 h)	Scenedesmus subspicatus	Algae

Chronic toxicity:

Identification	Concentration		Species	Genus
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)	NOEC	Non-applicable		
CAS: 2215-35-2	NOEC	0.4 mg/L	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Identification	Degradability		Biodegradability	
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)	BOD5	Non-applicable	Concentration	Non-applicable
CAS: 2215-35-2	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	1.5 %

12.3 Bioaccumulative potential:

Identification	Bioaccumulation potential	
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	BCF	
CAS: 72623-87-1	Pow Log	3.9
	Potential	

12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)	Koc	Non-applicable	Henry	Non-applicable
CAS: 2215-35-2	Conclusion	Non-applicable	Dry soil	Non-applicable
	Surface tension	5.98E-2 N/m (71.96 ºF)	Moist soil	Non-applicable

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations. In case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See epigraph 6.2.

Regulations related to waste management:

Legislation related to waste management:

40 CFR Part 261- IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

SECTION 14: TRANSPORT INFORMATION

This product is not regulated for transport.

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SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

SARA Title III - Toxic Chemical Release Inventory Reporting (Section 313): zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)
California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986): Non-applicable
The Toxic Substances Control Act (TSCA) : Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC ; Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based ; Distillates (petroleum), hydrotreated heavy paraffinic ; zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) ; Distillates (petroleum), solvent-dewaxed heavy paraffinic
Massachusetts RTK - Substance List: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
New Jersey Worker and Community Right-to-Know Act: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
New York RTK - Substance list: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
Pennsylvania Worker and Community Right-to-Know Law: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
CANADA-Domestic Substances List (DSL): Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC ; Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based ; Distillates (petroleum), hydrotreated heavy paraffinic ; zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) ; Distillates (petroleum), solvent-dewaxed heavy paraffinic
CANADA-Non-Domestic Substances List (NDSL): Non-applicable
NTP (National Toxicology Program): Non-applicable
Minnesota - Hazardous substances ERTK: Non-applicable
Rhode Island - Hazardous substances RTK: Non-applicable
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096): Non-applicable
Hazardous Air Pollutants (Clean Air Act): Non-applicable
Hazardous substances release notification under CERCLA sections 102-103 (40 CFR Part 302): Non-applicable

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation:

Take into consideration other applicable federal, state, and local laws and local regulations.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Appendix d to §1910.1200 - Safety data sheets

Texts of the legislative phrases mentioned in section 2:

H350: May cause cancer.
H304: May be fatal if swallowed and enters airways.
H319: Causes serious eye irritation.

Texts of the legislative phrases mentioned in section 3:

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

29 CFR 1910.1200:

Asp. Tox. 1: H304 - May be fatal if swallowed and enters airways.
Carc. 1B: H350 - May cause cancer.
Eye Dam. 1: H318 - Causes serious eye damage.
Skin Irrit. 2: H315 - Causes skin irritation.

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

Occupational Safety & Health Administration (OSHA).

Abbreviations and acronyms:

- CONTINUED ON NEXT PAGE -

SECTION 16: OTHER INFORMATION (continued)

IMDG: International maritime dangerous goods code
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
COD: Chemical Oxygen Demand
BOD5: 5-day biochemical oxygen demand
BCF: Bioconcentration factor
LD50: Lethal Dose 50
CL50: Lethal Concentration 50
EC50: Effective concentration 50
Log-POW: Octanol-water partition coefficient
Koc: Partition coefficient of organic carbon
IARC: International Agency for Research on Cancer

END OF SAFETY DATA SHEET

BRAVA IGNIS SAE 10W-30 - SP, SN PLUS

SECTION 1: IDENTIFICATION

1.1 GHS Product identifier: BRAVA IGNIS SAE 10W-30 - SP, SN PLUS

Other means of identification:

Non-applicable

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Lubricant

Uses advised against: All uses not specified in this section or in section 7.3

1.3 Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:

OLEIN REFINERY CORP
Carr. 3 Km. 90.4 BO Aguacate
00767 Yabucoa - PR
Phone: 7872662103
lab@oleincorp.com

1.4 Emergency phone number:

SECTION 2: HAZARD(S) IDENTIFICATION

2.1 Classification of the substance or mixture:

29 CFR 1910.1200:

Classification of this product has been carried out in accordance with paragraph (d) of § 1910.1200.

Carc. 1B: Carcinogenicity, Category 1B, H350
Eye Irrit. 2A: Eye irritation, Category 2A, H319

2.2 Label elements:

29 CFR 1910.1200:

Danger

Hazard statements:

Carc. 1B: H350 - May cause cancer.
Eye Irrit. 2A: H319 - Causes serious eye irritation.

Precautionary statements:

P101: If medical advice is needed, have product container or label at hand.
P102: Keep out of reach of children.
P201: Obtain special instructions before use.
P264: Wash thoroughly after use.
P280: Wear protective gloves/face protection/protective clothing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P501: Dispose of the contents/containers according to the local, state and federal regulations.

Substances that contribute to the classification

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based; Distillates (petroleum), hydrotreated heavy paraffinic; Distillates (petroleum), solvent-dewaxed heavy paraffinic

2.3 Hazards not otherwise classified (HNOC):

Non-applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances:

Non-applicable

3.2 Mixtures:

- CONTINUED ON NEXT PAGE -

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

Chemical description: Mineral oil

Components:

Remaining components are non-hazardous and/or present at amounts below reportable limits. The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.Therefore, in accordance with Appendix D to § 1910.1200, the product contains:

Identification	Chemical name/Classification	Concentration
CAS: 64742-54-7	**Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC** Asp. Tox. 1: H304 - Danger	**25 - <50 %**
CAS: 72623-87-1	**Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based** Carc. 1B: H350 - Danger	**25 - <50 %**
CAS: 64742-54-7	**Distillates (petroleum), hydrotreated heavy paraffinic** Carc. 1B: H350 - Danger	**<10 %**
CAS: 2215-35-2	**zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)** Eye Dam. 1: H318; Skin Irrit. 2: H315 - Danger	**<10 %**
CAS: 64742-65-0	**Distillates (petroleum), solvent-dewaxed heavy paraffinic** Carc. 1B: H350 - Danger	**<10 %**

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

SECTION 4: FIRST-AID MEASURES

4.1 Description of necessary measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:

This product does not contain substances classified as hazardous for inhalation, however, in case of symptoms of intoxication remove the person affected from the exposure area and provide with fresh air. Seek medical attention if the symptoms get worse or persist.

By skin contact:

This product is not classified as hazardous when in contact with the skin. However, in case of skin contact it is recommended to remove contaminated clothes and shoes, rinse the skin or shower the person affected if necessary thoroughly with cold water and neutral soap. In case of serious reaction consult a doctor.

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

4.2 Most important symptoms/effects, acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

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

Non-applicable

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable (and unsuitable) extinguishing media:

Suitable extinguishing media:

If possible use polyvalent powder fire extinguishers (ABC powder), alternatively use foam or carbon dioxide extinguishers (CO_2).

Unsuitable extinguishing media:

IT IS RECOMMENDED NOT to use full jet water as an extinguishing agent.

5.2 Specific hazards arising from the chemical:

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SECTION 5: FIRE-FIGHTING MEASURES (continued)

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Special protective equipment and precautions for fire-fighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

Additional provisions:

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Only properly trained personnel should be involved in firefighting. Evacuate nonessential personnel from the fire area. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Evacuate the area and keep out those who do not have protection.

For emergency responders:

See section 8.

6.2 Environmental precautions:

This product is not classified as hazardous to the environment. Keep product away from drains, surface and underground water.

6.3 Methods and materials for containment and cleaning up:

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.- Precautions for safe manipulation

Comply with the current standards 29 CFR 1910 Occupational Safety and Health Standards. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations to prevent ergonomic and toxicological risks

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

7.2 Conditions for safe storage, including any incompatibilities:

A.- Technical measures for storage

Minimum Temp.:	41 ºF
Maximum Temp.:	86 ºF
Maximum time:	12 Months

B.- General conditions for storage

- CONTINUED ON NEXT PAGE -

SECTION 7: HANDLING AND STORAGE (continued)

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be monitored in the workplace:

Oils: PEL-TWA= 5mg/m3

8.2 Appropriate engineering controls:

A.- Individual protection measures, such as personal protective equipment

As a preventative measure it is recommended to use basic Personal Protection Equipment. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation, the information on clothing performance must be combined with professional judgment, and a clear understanding of the clothing application, to provide the best protection to the worker. All chemical protective clothing use must be based on a hazard assessment to determine the risks for exposure to chemicals and other hazards. Conduct hazard assessments in accordance with 29 CFR 1910.132.

B.- Respiratory protection

Pictogram	PPE	Remarks
 Mandatory respiratory tract protection	Filter mask for gases and vapours	Replace when there is a taste or smell of the contaminant inside the face mask. If the contaminant comes with warnings it is recommended to use isolation equipment. Use respirator in accordance with manufacturer´s use limitations and OSHA standard 1910.134 (29CFR)

C.- Specific protection for the hands

Pictogram	PPE	Remarks
 Mandatory hand protection	NON-disposable chemical protective gloves	The Breakthrough Time indicated by the manufacturer must exceed the period during which the product is being used. Do not use protective creams after the product has come into contact with skin. Use gloves in accordance with manufacturer´s use limitations and OSHA standard 1910.138 (29CFR)

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.

D.- Ocular and facial protection

Pictogram	PPE	Remarks
 Mandatory face protection	Face shield	Clean daily and disinfect periodically according to the manufacturer´s instructions. Use if there is a risk of splashing. Use this PPE in accordance with manufacturer´s use limitations and OSHA standard 1910.133 (29CFR)

E.- Bodily protection

Pictogram	PPE	Remarks
 Mandatory complete body protection	Disposable clothing for protection against chemical risks	For professional use only. Clean periodically according to the manufacturer´s instructions.
 Mandatory foot protection	Safety footwear for protection against chemical risk	Replace boots at any sign of deterioration. Use foot protection in accordance with manufacturer´s use limitations and OSHA standard 1910.136 (29CFR)

- CONTINUED ON NEXT PAGE -

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

F.- Additional emergency measures

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

Environmental exposure controls:

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

National volatile organic compound emission standards (40 CFR Part 59):

V.O.C. (Subpart C - Consumer): 0 % weight

V.O.C. (Coatings) at 68 ºF: 0 kg/m³ (0 g/L)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 68 ºF:	Liquid
Appearance:	Oily
Color:	Amber
Odor:	Characteristic
Odour threshold:	Non-applicable *

Volatility:

Boiling point at atmospheric pressure:	639 ºF
Vapour pressure at 68 ºF:	Non-applicable *
Vapour pressure at 122 ºF:	<300000 Pa (300 kPa)
Evaporation rate at 68 ºF:	Non-applicable *

Product description:

Density at 68 ºF:	890.6 kg/m³
Relative density at 68 ºF:	0.891
Dynamic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 104 ºF:	64.2 mm²/s (ASTM D-445)
Kinematic viscosity at 212 ºF:	11.18 mm²/s (ASTM D-445)
Concentration:	Non-applicable *
pH:	Non-applicable *
Vapour density at 68 ºF:	Non-applicable *
Partition coefficient n-octanol/water 68 ºF:	Non-applicable *
Solubility in water at 68 ºF:	Non-applicable *
Solubility properties:	Non-applicable *
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *

Flammability:

Flash Point:	Non Flammable (>199.4 ºF)

*Not relevant due to the nature of the product, not providing information property of its hazards.

- CONTINUED ON NEXT PAGE -

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	550 ºF
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *
Particle characteristics:	
Median equivalent diameter:	Non-applicable

9.2 Other information:

Information with regard to physical hazard classes:

Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *
Corrosive to metals:	Non-applicable *
Heat of combustion:	Non-applicable *
Aerosols-total percentage (by mass) of flammable components:	Non-applicable *
Other safety characteristics:	
Surface tension at 68 ºF:	Non-applicable *
Refraction index:	Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

10.2 Chemical stability:

Chemically stable under the conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Not applicable	Not applicable	Avoid alkalis or strong bases

10.6 Hazardous decomposition products:

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO2), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

The experimental information related to the toxicological properties of the product itself is not available

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

A- Ingestion (acute effect):

- CONTINUED ON NEXT PAGE -

SECTION 11: TOXICOLOGICAL INFORMATION (continued)

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, however it does contain substances classified as dangerous for this effect. For more information see section 3.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for skin contact. For more information see section 3.
- Contact with the eyes: Produces eye damage after contact.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- Carcinogenicity: Exposure to this product can cause cancer. For more specific information on the possible health effects see section 2.
  IARC: Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC (3); Distillates (petroleum), hydrotreated heavy paraffinic (3); Distillates (petroleum), solvent-dewaxed heavy paraffinic (3)
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensitising effects. For more information see section 3.
- Cutaneous: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

H- Aspiration hazard:

Based on available data, the classification criteria are not met, however it does contain substances classified as dangerous for this effect. For more information see section 3.

Other information:

Non-applicable

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	LD50 oral	5100 mg/kg	Rat
CAS: 72623-87-1	LD50 dermal	5100 mg/kg	Rabbit
	LC50 inhalation	Non-applicable	
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)	LD50 oral	2230 mg/kg	Rat
CAS: 2215-35-2	LD50 dermal	Non-applicable	
	LC50 inhalation	Non-applicable	

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SECTION 12: ECOLOGICAL INFORMATION

The experimental information related to the eco-toxicological properties of the product itself is not available

Contains phosphates. Excessive discharge may cause eutrophication.

12.1 Ecotoxicity (aquatic and terrestrial, where available):

Acute toxicity:

Identification	Concentration		Species	Genus
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	LC50	5000 mg/L (96 h)	Oncorhynchus mykiss	Fish
CAS: 72623-87-1	EC50	1000 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	1000 mg/L (96 h)	Scenedesmus subspicatus	Algae

Chronic toxicity:

Identification	Concentration		Species	Genus
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)	NOEC	Non-applicable		
CAS: 2215-35-2	NOEC	0.4 mg/L	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Identification	Degradability		Biodegradability	
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)	BOD5	Non-applicable	Concentration	Non-applicable
CAS: 2215-35-2	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	1.5 %

12.3 Bioaccumulative potential:

Identification	Bioaccumulation potential	
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	BCF	
CAS: 72623-87-1	Pow Log	3.9
	Potential	

12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)	Koc	Non-applicable	Henry	Non-applicable
CAS: 2215-35-2	Conclusion	Non-applicable	Dry soil	Non-applicable
	Surface tension	5.98E-2 N/m (71.96 ºF)	Moist soil	Non-applicable

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations. In case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See epigraph 6.2.

Regulations related to waste management:

Legislation related to waste management:

40 CFR Part 261- IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

SECTION 14: TRANSPORT INFORMATION

This product is not regulated for transport.

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SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

SARA Title III - Toxic Chemical Release Inventory Reporting (Section 313): zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)
California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986): Non-applicable
The Toxic Substances Control Act (TSCA) : Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC ; Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based ; Distillates (petroleum), hydrotreated heavy paraffinic ; zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) ; Distillates (petroleum), solvent-dewaxed heavy paraffinic
Massachusetts RTK - Substance List: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
New Jersey Worker and Community Right-to-Know Act: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
New York RTK - Substance list: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
Pennsylvania Worker and Community Right-to-Know Law: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
CANADA-Domestic Substances List (DSL): Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC ; Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based ; Distillates (petroleum), hydrotreated heavy paraffinic ; zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) ; Distillates (petroleum), solvent-dewaxed heavy paraffinic
CANADA-Non-Domestic Substances List (NDSL): Non-applicable
NTP (National Toxicology Program): Non-applicable
Minnesota - Hazardous substances ERTK: Non-applicable
Rhode Island - Hazardous substances RTK: Non-applicable
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096): Non-applicable
Hazardous Air Pollutants (Clean Air Act): Non-applicable
Hazardous substances release notification under CERCLA sections 102-103 (40 CFR Part 302): Non-applicable

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation:

Take into consideration other applicable federal, state, and local laws and local regulations.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Appendix d to §1910.1200 - Safety data sheets

Texts of the legislative phrases mentioned in section 2:

H350: May cause cancer.
H319: Causes serious eye irritation.

Texts of the legislative phrases mentioned in section 3:

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

29 CFR 1910.1200:

Asp. Tox. 1: H304 - May be fatal if swallowed and enters airways.
Carc. 1B: H350 - May cause cancer.
Eye Dam. 1: H318 - Causes serious eye damage.
Skin Irrit. 2: H315 - Causes skin irritation.

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

Occupational Safety & Health Administration (OSHA).

Abbreviations and acronyms:

- CONTINUED ON NEXT PAGE -

SECTION 16: OTHER INFORMATION (continued)

IMDG: International maritime dangerous goods code
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
COD: Chemical Oxygen Demand
BOD5: 5-day biochemical oxygen demand
BCF: Bioconcentration factor
LD50: Lethal Dose 50
CL50: Lethal Concentration 50
EC50: Effective concentration 50
Log-POW: Octanol-water partition coefficient
Koc: Partition coefficient of organic carbon
IARC: International Agency for Research on Cancer

END OF SAFETY DATA SHEET

BRAVA IGNIS SAE 10W-40 - SP, SN PLUS

SECTION 1: IDENTIFICATION

1.1 GHS Product identifier: BRAVA IGNIS SAE 10W-40 - SP, SN PLUS

Other means of identification:

Non-applicable

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Lubricant

Uses advised against: All uses not specified in this section or in section 7.3

1.3 Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:

OLEIN REFINERY CORP
Carr. 3 Km. 90.4 BO Aguacate
00767 Yabucoa - PR
Phone: 7872662103
lab@oleincorp.com

1.4 Emergency phone number:

SECTION 2: HAZARD(S) IDENTIFICATION

2.1 Classification of the substance or mixture:

29 CFR 1910.1200:

Classification of this product has been carried out in accordance with paragraph (d) of § 1910.1200.

Asp. Tox. 1: Aspiration hazard, Category 1, H304
Carc. 1B: Carcinogenicity, Category 1B, H350
Eye Irrit. 2A: Eye irritation, Category 2A, H319

2.2 Label elements:

29 CFR 1910.1200:

Danger

Hazard statements:

Asp. Tox. 1: H304 - May be fatal if swallowed and enters airways.
Carc. 1B: H350 - May cause cancer.
Eye Irrit. 2A: H319 - Causes serious eye irritation.

Precautionary statements:

P101: If medical advice is needed, have product container or label at hand.
P102: Keep out of reach of children.
P201: Obtain special instructions before use.
P264: Wash thoroughly after use.
P280: Wear protective gloves/face protection/protective clothing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P501: Dispose of the contents/containers according to the local, state and federal regulations.

Substances that contribute to the classification

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based; Distillates (petroleum), hydrotreated heavy paraffinic; Distillates (petroleum), solvent-dewaxed heavy paraffinic

2.3 Hazards not otherwise classified (HNOC):

Non-applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances:

Non-applicable

- CONTINUED ON NEXT PAGE -

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

3.2 Mixtures:

Chemical description: Mineral oil

Components:

Remaining components are non-hazardous and/or present at amounts below reportable limits. The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.Therefore, in accordance with Appendix D to § 1910.1200, the product contains:

Identification	Chemical name/Classification	Concentration
CAS: 64742-54-7	**Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC** Asp. Tox. 1: H304 - Danger	**25 - <50 %**
CAS: 72623-87-1	**Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based** Carc. 1B: H350 - Danger	**25 - <50 %**
CAS: 64742-54-7	**Distillates (petroleum), hydrotreated heavy paraffinic** Carc. 1B: H350 - Danger	**<10 %**
CAS: 2215-35-2	**zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)** Eye Dam. 1: H318; Skin Irrit. 2: H315 - Danger	**<10 %**
CAS: 64742-65-0	**Distillates (petroleum), solvent-dewaxed heavy paraffinic** Carc. 1B: H350 - Danger	**<10 %**

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

SECTION 4: FIRST-AID MEASURES

4.1 Description of necessary measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:

This product does not contain substances classified as hazardous for inhalation, however, in case of symptoms of intoxication remove the person affected from the exposure area and provide with fresh air. Seek medical attention if the symptoms get worse or persist.

By skin contact:

This product is not classified as hazardous when in contact with the skin. However, in case of skin contact it is recommended to remove contaminated clothes and shoes, rinse the skin or shower the person affected if necessary thoroughly with cold water and neutral soap. In case of serious reaction consult a doctor.

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Request medical assistance immediately, showing the SDS of this product. Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. In the case of loss of consciousness do not administrate anything orally unless supervised by a doctor. Rinse out the mouth and throat, as they may have been affected during ingestion. Keep the person affected at rest.

4.2 Most important symptoms/effects, acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

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

Non-applicable

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable (and unsuitable) extinguishing media:

Suitable extinguishing media:

If possible use polyvalent powder fire extinguishers (ABC powder), alternatively use foam or carbon dioxide extinguishers (CO_2).

Unsuitable extinguishing media:

- CONTINUED ON NEXT PAGE -

SECTION 5: FIRE-FIGHTING MEASURES (continued)

IT IS RECOMMENDED NOT to use full jet water as an extinguishing agent.

5.2 Specific hazards arising from the chemical:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Special protective equipment and precautions for fire-fighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

Additional provisions:

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Only properly trained personnel should be involved in firefighting. Evacuate nonessential personnel from the fire area. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Evacuate the area and keep out those who do not have protection.

For emergency responders:

See section 8.

6.2 Environmental precautions:

This product is not classified as hazardous to the environment. Keep product away from drains, surface and underground water.

6.3 Methods and materials for containment and cleaning up:

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.- Precautions for safe manipulation

Comply with the current standards 29 CFR 1910 Occupational Safety and Health Standards. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations to prevent ergonomic and toxicological risks

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

7.2 Conditions for safe storage, including any incompatibilities:

A.- Technical measures for storage

Minimum Temp.:	41 ºF
Maximum Temp.:	86 ºF

- CONTINUED ON NEXT PAGE -

SECTION 7: HANDLING AND STORAGE (continued)

Maximum time: 12 Months

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be monitored in the workplace:

Oils: PEL-TWA= 5mg/m3

8.2 Appropriate engineering controls:

A.- Individual protection measures, such as personal protective equipment

As a preventative measure it is recommended to use basic Personal Protection Equipment. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation, the information on clothing performance must be combined with professional judgment, and a clear understanding of the clothing application, to provide the best protection to the worker. All chemical protective clothing use must be based on a hazard assessment to determine the risks for exposure to chemicals and other hazards. Conduct hazard assessments in accordance with 29 CFR 1910.132.

B.- Respiratory protection

Pictogram	PPE	Remarks
 Mandatory respiratory tract protection	Filter mask for gases and vapours	Replace when there is a taste or smell of the contaminant inside the face mask. If the contaminant comes with warnings it is recommended to use isolation equipment. Use respirator in accordance with manufacturer´s use limitations and OSHA standard 1910.134 (29CFR)

C.- Specific protection for the hands

Pictogram	PPE	Remarks
 Mandatory hand protection	NON-disposable chemical protective gloves	The Breakthrough Time indicated by the manufacturer must exceed the period during which the product is being used. Do not use protective creams after the product has come into contact with skin. Use gloves in accordance with manufacturer´s use limitations and OSHA standard 1910.138 (29CFR)

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.

D.- Ocular and facial protection

Pictogram	PPE	Remarks
 Mandatory face protection	Face shield	Clean daily and disinfect periodically according to the manufacturer´s instructions. Use if there is a risk of splashing. Use this PPE in accordance with manufacturer´s use limitations and OSHA standard 1910.133 (29CFR)

E.- Bodily protection

Pictogram	PPE	Remarks
 Mandatory complete body protection	Disposable clothing for protection against chemical risks	For professional use only. Clean periodically according to the manufacturer´s instructions.

- CONTINUED ON NEXT PAGE -

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Pictogram	PPE	Remarks
 Mandatory foot protection	Safety footwear for protection against chemical risk	Replace boots at any sign of deterioration. Use foot protection in accordance with manufacturer´s use limitations and OSHA standard 1910.136 (29CFR)

F.- Additional emergency measures

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

Environmental exposure controls:

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

National volatile organic compound emission standards (40 CFR Part 59):

V.O.C. (Subpart C - Consumer): 0 % weight

V.O.C. (Coatings) at 68 ºF: 0 kg/m³ (0 g/L)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 68 ºF:	Liquid
Appearance:	Oily
Color:	Amber
Odor:	Lubricant
Odour threshold:	Non-applicable *

Volatility:

Boiling point at atmospheric pressure:	639 ºF
Vapour pressure at 68 ºF:	Non-applicable *
Vapour pressure at 122 ºF:	<300000 Pa (300 kPa)
Evaporation rate at 68 ºF:	Non-applicable *

Product description:

Density at 68 ºF:	890.6 kg/m³
Relative density at 68 ºF:	0.891
Dynamic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 104 ºF:	<20.5 mm²/s
Kinematic viscosity at 212 ºF:	14.5 mm²/s (ASTM D-445)
Concentration:	Non-applicable *
pH:	Non-applicable *
Vapour density at 68 ºF:	Non-applicable *
Partition coefficient n-octanol/water 68 ºF:	Non-applicable *
Solubility in water at 68 ºF:	Non-applicable *
Solubility properties:	Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.

- CONTINUED ON NEXT PAGE -

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *
Flammability:	
Flash Point:	410 ºF (ASTM D-93)
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	550 ºF
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *
Particle characteristics:	
Median equivalent diameter:	Non-applicable

9.2 Other information:

Information with regard to physical hazard classes:

Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *
Corrosive to metals:	Non-applicable *
Heat of combustion:	Non-applicable *
Aerosols-total percentage (by mass) of flammable components:	Non-applicable *
Other safety characteristics:	
Surface tension at 68 ºF:	Non-applicable *
Refraction index:	Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

10.2 Chemical stability:

Chemically stable under the conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Not applicable	Not applicable	Avoid alkalis or strong bases

10.6 Hazardous decomposition products:

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO2), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

The experimental information related to the toxicological properties of the product itself is not available

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SECTION 11: TOXICOLOGICAL INFORMATION (continued)

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

A- Ingestion (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, however it does contain substances classified as dangerous for this effect. For more information see section 3.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for skin contact. For more information see section 3.
- Contact with the eyes: Produces eye damage after contact.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- Carcinogenicity: Exposure to this product can cause cancer. For more specific information on the possible health effects see section 2.
  IARC: Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC (3); Distillates (petroleum), hydrotreated heavy paraffinic (3); Distillates (petroleum), solvent-dewaxed heavy paraffinic (3)
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensitising effects. For more information see section 3.
- Cutaneous: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

H- Aspiration hazard:

The consumption of a considerable dose can cause pulmonary damage.

Other information:

Non-applicable

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS: 72623-87-1	LD50 oral	5100 mg/kg	Rat
	LD50 dermal	5100 mg/kg	Rabbit
	LC50 inhalation	Non-applicable	
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) CAS: 2215-35-2	LD50 oral	2230 mg/kg	Rat
	LD50 dermal	Non-applicable	
	LC50 inhalation	Non-applicable	

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SECTION 12: ECOLOGICAL INFORMATION

The experimental information related to the eco-toxicological properties of the product itself is not available

Contains phosphates. Excessive discharge may cause eutrophication.

12.1 Ecotoxicity (aquatic and terrestrial, where available):

Acute toxicity:

Identification	Concentration		Species	Genus
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	LC50	5000 mg/L (96 h)	Oncorhynchus mykiss	Fish
CAS: 72623-87-1	EC50	1000 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	1000 mg/L (96 h)	Scenedesmus subspicatus	Algae

Chronic toxicity:

Identification	Concentration		Species	Genus
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)	NOEC	Non-applicable		
CAS: 2215-35-2	NOEC	0.4 mg/L	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Identification	Degradability		Biodegradability	
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)	BOD5	Non-applicable	Concentration	Non-applicable
CAS: 2215-35-2	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	1.5 %

12.3 Bioaccumulative potential:

Identification	Bioaccumulation potential	
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	BCF	
CAS: 72623-87-1	Pow Log	3.9
	Potential	

12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)	Koc	Non-applicable	Henry	Non-applicable
CAS: 2215-35-2	Conclusion	Non-applicable	Dry soil	Non-applicable
	Surface tension	5.98E-2 N/m (71.96 ºF)	Moist soil	Non-applicable

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations. In case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See epigraph 6.2.

Regulations related to waste management:

Legislation related to waste management:

40 CFR Part 261- IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

SECTION 14: TRANSPORT INFORMATION

This product is not regulated for transport.

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SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

SARA Title III - Toxic Chemical Release Inventory Reporting (Section 313): zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)
California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986): Non-applicable
The Toxic Substances Control Act (TSCA) : Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC ; Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based ; Distillates (petroleum), hydrotreated heavy paraffinic ; zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) ; Distillates (petroleum), solvent-dewaxed heavy paraffinic
Massachusetts RTK - Substance List: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
New Jersey Worker and Community Right-to-Know Act: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
New York RTK - Substance list: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
Pennsylvania Worker and Community Right-to-Know Law: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
CANADA-Domestic Substances List (DSL): Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC ; Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based ; Distillates (petroleum), hydrotreated heavy paraffinic ; zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) ; Distillates (petroleum), solvent-dewaxed heavy paraffinic
CANADA-Non-Domestic Substances List (NDSL): Non-applicable
NTP (National Toxicology Program): Non-applicable
Minnesota - Hazardous substances ERTK: Non-applicable
Rhode Island - Hazardous substances RTK: Non-applicable
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096): Non-applicable
Hazardous Air Pollutants (Clean Air Act): Non-applicable
Hazardous substances release notification under CERCLA sections 102-103 (40 CFR Part 302): Non-applicable

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation:

Take into consideration other applicable federal, state, and local laws and local regulations.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Appendix d to §1910.1200 - Safety data sheets

Texts of the legislative phrases mentioned in section 2:

H350: May cause cancer.
H304: May be fatal if swallowed and enters airways.
H319: Causes serious eye irritation.

Texts of the legislative phrases mentioned in section 3:

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

29 CFR 1910.1200:

Asp. Tox. 1: H304 - May be fatal if swallowed and enters airways.
Carc. 1B: H350 - May cause cancer.
Eye Dam. 1: H318 - Causes serious eye damage.
Skin Irrit. 2: H315 - Causes skin irritation.

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

Occupational Safety & Health Administration (OSHA).

Abbreviations and acronyms:

- CONTINUED ON NEXT PAGE -

SECTION 16: OTHER INFORMATION (continued)

IMDG: International maritime dangerous goods code
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
COD: Chemical Oxygen Demand
BOD5: 5-day biochemical oxygen demand
BCF: Bioconcentration factor
LD50: Lethal Dose 50
CL50: Lethal Concentration 50
EC50: Effective concentration 50
Log-POW: Octanol-water partition coefficient
Koc: Partition coefficient of organic carbon
IARC: International Agency for Research on Cancer

END OF SAFETY DATA SHEET

BRAVA IGNIS SAE 15W-40 - SN

SECTION 1: IDENTIFICATION

1.1 GHS Product identifier: BRAVA IGNIS SAE 15W-40 - SN

Other means of identification:

Non-applicable

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Lubricant

Uses advised against: All uses not specified in this section or in section 7.3

1.3 Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:

OLEIN REFINERY CORP
Carr. 3 Km. 90.4 BO Aguacate
00767 Yabucoa - PR
Phone: 7872662103
lab@oleincorp.com

1.4 Emergency phone number:

SECTION 2: HAZARD(S) IDENTIFICATION

2.1 Classification of the substance or mixture:

29 CFR 1910.1200:

Classification of this product has been carried out in accordance with paragraph (d) of § 1910.1200.

Asp. Tox. 1: Aspiration hazard, Category 1, H304
Carc. 1B: Carcinogenicity, Category 1B, H350
Eye Irrit. 2A: Eye irritation, Category 2A, H319

2.2 Label elements:

29 CFR 1910.1200:

Danger

Hazard statements:

Asp. Tox. 1: H304 - May be fatal if swallowed and enters airways.
Carc. 1B: H350 - May cause cancer.
Eye Irrit. 2A: H319 - Causes serious eye irritation.

Precautionary statements:

P101: If medical advice is needed, have product container or label at hand.
P102: Keep out of reach of children.
P201: Obtain special instructions before use.
P264: Wash thoroughly after use.
P280: Wear protective gloves/face protection/protective clothing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P501: Dispose of the contents/containers according to the local, state and federal regulations.

Substances that contribute to the classification

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based; Distillates (petroleum), hydrotreated heavy paraffinic; Distillates (petroleum), solvent-dewaxed heavy paraffinic

2.3 Hazards not otherwise classified (HNOC):

Non-applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances:

Non-applicable

- CONTINUED ON NEXT PAGE -

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

3.2 Mixtures:

Chemical description: Mineral oil

Components:

Remaining components are non-hazardous and/or present at amounts below reportable limits. The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.Therefore, in accordance with Appendix D to § 1910.1200, the product contains:

Identification	Chemical name/Classification	Concentration
CAS: 64742-54-7	**Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC** Asp. Tox. 1: H304 - Danger	**25 - <50 %**
CAS: 72623-87-1	**Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based** Carc. 1B: H350 - Danger	**25 - <50 %**
CAS: 64742-54-7	**Distillates (petroleum), hydrotreated heavy paraffinic** Carc. 1B: H350 - Danger	**<10 %**
CAS: 2215-35-2	**zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)** Eye Dam. 1: H318; Skin Irrit. 2: H315 - Danger	**<10 %**
CAS: 64742-65-0	**Distillates (petroleum), solvent-dewaxed heavy paraffinic** Carc. 1B: H350 - Danger	**<10 %**

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

SECTION 4: FIRST-AID MEASURES

4.1 Description of necessary measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:

This product does not contain substances classified as hazardous for inhalation, however, in case of symptoms of intoxication remove the person affected from the exposure area and provide with fresh air. Seek medical attention if the symptoms get worse or persist.

By skin contact:

This product is not classified as hazardous when in contact with the skin. However, in case of skin contact it is recommended to remove contaminated clothes and shoes, rinse the skin or shower the person affected if necessary thoroughly with cold water and neutral soap. In case of serious reaction consult a doctor.

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Request medical assistance immediately, showing the SDS of this product. Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. In the case of loss of consciousness do not administrate anything orally unless supervised by a doctor. Rinse out the mouth and throat, as they may have been affected during ingestion. Keep the person affected at rest.

4.2 Most important symptoms/effects, acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

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

Non-applicable

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable (and unsuitable) extinguishing media:

Suitable extinguishing media:

If possible use polyvalent powder fire extinguishers (ABC powder), alternatively use foam or carbon dioxide extinguishers (CO_2).

Unsuitable extinguishing media:

- CONTINUED ON NEXT PAGE -

SECTION 5: FIRE-FIGHTING MEASURES (continued)

IT IS RECOMMENDED NOT to use full jet water as an extinguishing agent.

5.2 Specific hazards arising from the chemical:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Special protective equipment and precautions for fire-fighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

Additional provisions:

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Only properly trained personnel should be involved in firefighting. Evacuate nonessential personnel from the fire area. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Evacuate the area and keep out those who do not have protection.

For emergency responders:

See section 8.

6.2 Environmental precautions:

This product is not classified as hazardous to the environment. Keep product away from drains, surface and underground water.

6.3 Methods and materials for containment and cleaning up:

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.- Precautions for safe manipulation

Comply with the current standards 29 CFR 1910 Occupational Safety and Health Standards. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations to prevent ergonomic and toxicological risks

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

7.2 Conditions for safe storage, including any incompatibilities:

A.- Technical measures for storage

Minimum Temp.:	41 ºF
Maximum Temp.:	86 ºF

- CONTINUED ON NEXT PAGE -

SECTION 7: HANDLING AND STORAGE (continued)

Maximum time: 12 Months

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be monitored in the workplace:

Oils: PEL-TWA= 5mg/m3

8.2 Appropriate engineering controls:

A.- Individual protection measures, such as personal protective equipment

As a preventative measure it is recommended to use basic Personal Protection Equipment. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation, the information on clothing performance must be combined with professional judgment, and a clear understanding of the clothing application, to provide the best protection to the worker. All chemical protective clothing use must be based on a hazard assessment to determine the risks for exposure to chemicals and other hazards. Conduct hazard assessments in accordance with 29 CFR 1910.132.

B.- Respiratory protection

Pictogram	PPE	Remarks
 Mandatory respiratory tract protection	Filter mask for gases and vapours	Replace when there is a taste or smell of the contaminant inside the face mask. If the contaminant comes with warnings it is recommended to use isolation equipment. Use respirator in accordance with manufacturer´s use limitations and OSHA standard 1910.134 (29CFR)

C.- Specific protection for the hands

Pictogram	PPE	Remarks
 Mandatory hand protection	NON-disposable chemical protective gloves	The Breakthrough Time indicated by the manufacturer must exceed the period during which the product is being used. Do not use protective creams after the product has come into contact with skin. Use gloves in accordance with manufacturer´s use limitations and OSHA standard 1910.138 (29CFR)

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.

D.- Ocular and facial protection

Pictogram	PPE	Remarks
 Mandatory face protection	Face shield	Clean daily and disinfect periodically according to the manufacturer´s instructions. Use if there is a risk of splashing. Use this PPE in accordance with manufacturer´s use limitations and OSHA standard 1910.133 (29CFR)

E.- Bodily protection

Pictogram	PPE	Remarks
 Mandatory complete body protection	Disposable clothing for protection against chemical risks	For professional use only. Clean periodically according to the manufacturer´s instructions.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Pictogram	PPE	Remarks
 Mandatory foot protection	Safety footwear for protection against chemical risk	Replace boots at any sign of deterioration. Use foot protection in accordance with manufacturer´s use limitations and OSHA standard 1910.136 (29CFR)

F.- Additional emergency measures

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

Environmental exposure controls:

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

National volatile organic compound emission standards (40 CFR Part 59):

V.O.C. (Subpart C - Consumer): 0 % weight

V.O.C. (Coatings) at 68 ºF: 0 kg/m³ (0 g/L)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 68 ºF:	Liquid
Appearance:	Oily
Color:	Amber
Odor:	Lubricant
Odour threshold:	Non-applicable *

Volatility:

Boiling point at atmospheric pressure:	639 ºF
Vapour pressure at 68 ºF:	Non-applicable *
Vapour pressure at 122 ºF:	<300000 Pa (300 kPa)
Evaporation rate at 68 ºF:	Non-applicable *

Product description:

Density at 68 ºF:	890.6 kg/m³
Relative density at 68 ºF:	0.891
Dynamic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 104 ºF:	<20.5 mm²/s
Kinematic viscosity at 212 ºF:	15.1 mm²/s (ASTM D-445)
Concentration:	Non-applicable *
pH:	Non-applicable *
Vapour density at 68 ºF:	Non-applicable *
Partition coefficient n-octanol/water 68 ºF:	Non-applicable *
Solubility in water at 68 ºF:	Non-applicable *
Solubility properties:	Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *
Flammability:	
Flash Point:	410 ºF (ASTM D-93)
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	550 ºF
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *
Particle characteristics:	
Median equivalent diameter:	Non-applicable

9.2 Other information:

Information with regard to physical hazard classes:

Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *
Corrosive to metals:	Non-applicable *
Heat of combustion:	Non-applicable *
Aerosols-total percentage (by mass) of flammable components:	Non-applicable *
Other safety characteristics:	
Surface tension at 68 ºF:	Non-applicable *
Refraction index:	Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

10.2 Chemical stability:

Chemically stable under the conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Not applicable	Not applicable	Avoid alkalis or strong bases

10.6 Hazardous decomposition products:

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO2), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

The experimental information related to the toxicological properties of the product itself is not available

- CONTINUED ON NEXT PAGE -

SECTION 11: TOXICOLOGICAL INFORMATION (continued)

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

A- Ingestion (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, however it does contain substances classified as dangerous for this effect. For more information see section 3.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for skin contact. For more information see section 3.
- Contact with the eyes: Produces eye damage after contact.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- Carcinogenicity: Exposure to this product can cause cancer. For more specific information on the possible health effects see section 2.
  IARC: Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC (3); Distillates (petroleum), hydrotreated heavy paraffinic (3); Distillates (petroleum), solvent-dewaxed heavy paraffinic (3)
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensitising effects. For more information see section 3.
- Cutaneous: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

H- Aspiration hazard:

The consumption of a considerable dose can cause pulmonary damage.

Other information:

Non-applicable

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS: 72623-87-1	LD50 oral	5100 mg/kg	Rat
	LD50 dermal	5100 mg/kg	Rabbit
	LC50 inhalation	Non-applicable	
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) CAS: 2215-35-2	LD50 oral	2230 mg/kg	Rat
	LD50 dermal	Non-applicable	
	LC50 inhalation	Non-applicable	

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SECTION 12: ECOLOGICAL INFORMATION

The experimental information related to the eco-toxicological properties of the product itself is not available

Contains phosphates. Excessive discharge may cause eutrophication.

12.1 Ecotoxicity (aquatic and terrestrial, where available):

Acute toxicity:

Identification	Concentration		Species	Genus
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	LC50	5000 mg/L (96 h)	Oncorhynchus mykiss	Fish
CAS: 72623-87-1	EC50	1000 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	1000 mg/L (96 h)	Scenedesmus subspicatus	Algae

Chronic toxicity:

Identification	Concentration		Species	Genus
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)	NOEC	Non-applicable		
CAS: 2215-35-2	NOEC	0.4 mg/L	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Identification	Degradability		Biodegradability	
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)	BOD5	Non-applicable	Concentration	Non-applicable
CAS: 2215-35-2	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	1.5 %

12.3 Bioaccumulative potential:

Identification	Bioaccumulation potential	
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	BCF	
CAS: 72623-87-1	Pow Log	3.9
	Potential	

12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)	Koc	Non-applicable	Henry	Non-applicable
CAS: 2215-35-2	Conclusion	Non-applicable	Dry soil	Non-applicable
	Surface tension	5.98E-2 N/m (71.96 ºF)	Moist soil	Non-applicable

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations. In case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See epigraph 6.2.

Regulations related to waste management:

Legislation related to waste management:

40 CFR Part 261- IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

SECTION 14: TRANSPORT INFORMATION

This product is not regulated for transport.

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SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

SARA Title III - Toxic Chemical Release Inventory Reporting (Section 313): zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate)
California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986): Non-applicable
The Toxic Substances Control Act (TSCA) : Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC ; Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based ; Distillates (petroleum), hydrotreated heavy paraffinic ; zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) ; Distillates (petroleum), solvent-dewaxed heavy paraffinic
Massachusetts RTK - Substance List: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
New Jersey Worker and Community Right-to-Know Act: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
New York RTK - Substance list: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
Pennsylvania Worker and Community Right-to-Know Law: zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
CANADA-Domestic Substances List (DSL): Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC ; Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based ; Distillates (petroleum), hydrotreated heavy paraffinic ; zinc O,O,O´,O´-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) ; Distillates (petroleum), solvent-dewaxed heavy paraffinic
CANADA-Non-Domestic Substances List (NDSL): Non-applicable
NTP (National Toxicology Program): Non-applicable
Minnesota - Hazardous substances ERTK: Non-applicable
Rhode Island - Hazardous substances RTK: Non-applicable
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096): Non-applicable
Hazardous Air Pollutants (Clean Air Act): Non-applicable
Hazardous substances release notification under CERCLA sections 102-103 (40 CFR Part 302): Non-applicable

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation:

Take into consideration other applicable federal, state, and local laws and local regulations.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Appendix d to §1910.1200 - Safety data sheets

Texts of the legislative phrases mentioned in section 2:

H350: May cause cancer.
H304: May be fatal if swallowed and enters airways.
H319: Causes serious eye irritation.

Texts of the legislative phrases mentioned in section 3:

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

29 CFR 1910.1200:

Asp. Tox. 1: H304 - May be fatal if swallowed and enters airways.
Carc. 1B: H350 - May cause cancer.
Eye Dam. 1: H318 - Causes serious eye damage.
Skin Irrit. 2: H315 - Causes skin irritation.

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

Occupational Safety & Health Administration (OSHA).

Abbreviations and acronyms:

- CONTINUED ON NEXT PAGE -

SECTION 16: OTHER INFORMATION (continued)

IMDG: International maritime dangerous goods code
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
COD: Chemical Oxygen Demand
BOD5: 5-day biochemical oxygen demand
BCF: Bioconcentration factor
LD50: Lethal Dose 50
CL50: Lethal Concentration 50
EC50: Effective concentration 50
Log-POW: Octanol-water partition coefficient
Koc: Partition coefficient of organic carbon
IARC: International Agency for Research on Cancer

END OF SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

1.1 GHS Product identifier: BRAVA IGNIS SAE 20W-50 - SP

Other means of identification:

Non-applicable

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Lubricant

Uses advised against: All uses not specified in this section or in section 7.3

1.3 Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:

OLEIN REFINERY CORP
Carr. 3 Km. 90.4 BO Aguacate
00767 Yabucoa - PR
Phone: 7872662103
lab@oleincorp.com

1.4 Emergency phone number:

SECTION 2: HAZARD(S) IDENTIFICATION

2.1 Classification of the substance or mixture:

29 CFR 1910.1200:

Classification of this product has been carried out in accordance with paragraph (d) of § 1910.1200.

Asp. Tox. 1: Aspiration hazard, Category 1, H304
Carc. 1B: Carcinogenicity, Category 1B, H350

2.2 Label elements:

29 CFR 1910.1200:

Danger

Hazard statements:

Asp. Tox. 1: H304 - May be fatal if swallowed and enters airways.
Carc. 1B: H350 - May cause cancer.

Precautionary statements:

P101: If medical advice is needed, have product container or label at hand.
P102: Keep out of reach of children.
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P331: Do NOT induce vomiting.
P501: Dispose of the contents/containers according to the local, state and federal regulations.

Substances that contribute to the classification

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based; Distillates (petroleum), solvent-refined heavy paraffinic

2.3 Hazards not otherwise classified (HNOC):

Non-applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances:

Non-applicable

3.2 Mixtures:

Chemical description: Mineral oil

Components:

- CONTINUED ON NEXT PAGE -

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

Remaining components are non-hazardous and/or present at amounts below reportable limits. The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.Therefore, in accordance with Appendix D to § 1910.1200, the product contains:

Identification	Chemical name/Classification	Concentration
CAS: 72623-87-1	**Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based** Carc. 1B: H350 - Danger	**25 - <50 %**
CAS: 64742-54-7	**Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC** Asp. Tox. 1: H304 - Danger	**25 - <50 %**
CAS: 68649-42-3	**Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts** Eye Irrit. 2A: H319; Skin Irrit. 2: H315 - Warning	**<10 %**
CAS: 64741-88-4	**Distillates (petroleum), solvent-refined heavy paraffinic** Carc. 1B: H350 - Danger	**<10 %**
CAS: 61789-86-4	**Sulfonic acids, petroleum, calcium salts (TBN < 300)** Skin Sens. 1B: H317 - Warning	**<10 %**

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

SECTION 4: FIRST-AID MEASURES

4.1 Description of necessary measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:

This product does not contain substances classified as hazardous for inhalation, however, in case of symptoms of intoxication remove the person affected from the exposure area and provide with fresh air. Seek medical attention if the symptoms get worse or persist.

By skin contact:

This product is not classified as hazardous when in contact with the skin. However, in case of skin contact it is recommended to remove contaminated clothes and shoes, rinse the skin or shower the person affected if necessary thoroughly with cold water and neutral soap. In case of serious reaction consult a doctor.

By eye contact:

Rinse eyes thoroughly with water for at least 15 minutes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Request medical assistance immediately, showing the SDS of this product. Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. In the case of loss of consciousness do not administrate anything orally unless supervised by a doctor. Rinse out the mouth and throat, as they may have been affected during ingestion. Keep the person affected at rest.

4.2 Most important symptoms/effects, acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

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

Non-applicable

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable (and unsuitable) extinguishing media:

Suitable extinguishing media:

If possible use polyvalent powder fire extinguishers (ABC powder), alternatively use foam or carbon dioxide extinguishers (CO_2).

Unsuitable extinguishing media:

IT IS RECOMMENDED NOT to use full jet water as an extinguishing agent.

5.2 Specific hazards arising from the chemical:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

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SECTION 5: FIRE-FIGHTING MEASURES (continued)

5.3 Special protective equipment and precautions for fire-fighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

Additional provisions:

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Only properly trained personnel should be involved in firefighting. Evacuate nonessential personnel from the fire area. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Evacuate the area and keep out those who do not have protection.

For emergency responders:

See section 8.

6.2 Environmental precautions:

This product is not classified as hazardous to the environment. Keep product away from drains, surface and underground water.

6.3 Methods and materials for containment and cleaning up:

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.- Precautions for safe manipulation

Comply with the current standards 29 CFR 1910 Occupational Safety and Health Standards. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations to prevent ergonomic and toxicological risks

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

7.2 Conditions for safe storage, including any incompatibilities:

A.- Technical measures for storage

Minimum Temp.:	41 ºF
Maximum Temp.:	86 ºF
Maximum time:	12 Months

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

- CONTINUED ON NEXT PAGE -

SECTION 7: HANDLING AND STORAGE (continued)

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be monitored in the workplace:

Oils: PEL-TWA= 5mg/m3

8.2 Appropriate engineering controls:

A.- Individual protection measures, such as personal protective equipment

As a preventative measure it is recommended to use basic Personal Protection Equipment. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation, the information on clothing performance must be combined with professional judgment, and a clear understanding of the clothing application, to provide the best protection to the worker. All chemical protective clothing use must be based on a hazard assessment to determine the risks for exposure to chemicals and other hazards. Conduct hazard assessments in accordance with 29 CFR 1910.132.

B.- Respiratory protection

Pictogram	PPE	Remarks
 Mandatory respiratory tract protection	Filter mask for gases and vapours	Replace when there is a taste or smell of the contaminant inside the face mask. If the contaminant comes with warnings it is recommended to use isolation equipment. Use respirator in accordance with manufacturer´s use limitations and OSHA standard 1910.134 (29CFR)

C.- Specific protection for the hands

Pictogram	PPE	Remarks
 Mandatory hand protection	NON-disposable chemical protective gloves	The Breakthrough Time indicated by the manufacturer must exceed the period during which the product is being used. Do not use protective creams after the product has come into contact with skin. Use gloves in accordance with manufacturer´s use limitations and OSHA standard 1910.138 (29CFR)

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.

D.- Ocular and facial protection

Pictogram	PPE	Remarks
 Mandatory face protection	Face shield	Clean daily and disinfect periodically according to the manufacturer´s instructions. Use if there is a risk of splashing. Use this PPE in accordance with manufacturer´s use limitations and OSHA standard 1910.133 (29CFR)

E.- Bodily protection

Pictogram	PPE	Remarks
 Mandatory complete body protection	Disposable clothing for protection against chemical risks	For professional use only. Clean periodically according to the manufacturer´s instructions.
 Mandatory foot protection	Safety footwear for protection against chemical risk	Replace boots at any sign of deterioration. Use foot protection in accordance with manufacturer´s use limitations and OSHA standard 1910.136 (29CFR)

F.- Additional emergency measures

- CONTINUED ON NEXT PAGE -

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

Environmental exposure controls:

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

National volatile organic compound emission standards (40 CFR Part 59):

V.O.C. (Subpart C - Consumer): 0 % weight

V.O.C. (Coatings) at 68 ºF: 0 kg/m³ (0 g/L)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 68 ºF:	Liquid
Appearance:	Oily
Color:	Amber
Odor:	Lubricant
Odour threshold:	Non-applicable *

Volatility:

Boiling point at atmospheric pressure:	540 ºF
Vapour pressure at 68 ºF:	Non-applicable *
Vapour pressure at 122 ºF:	<300000 Pa (300 kPa)
Evaporation rate at 68 ºF:	Non-applicable *

Product description:

Density at 68 ºF:	Non-applicable *
Relative density at 68 ºF:	Non-applicable *
Dynamic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 104 ºF:	<20.5 mm²/s
Kinematic viscosity at 212 ºF:	17.8 mm²/s (ASTM D-445)
Concentration:	Non-applicable *
pH:	Non-applicable *
Vapour density at 68 ºF:	Non-applicable *
Partition coefficient n-octanol/water 68 ºF:	Non-applicable *
Solubility in water at 68 ºF:	Non-applicable *
Solubility properties:	Non-applicable *
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *

Flammability:

Flash Point:	428 ºF (ASTM D-93)
Flammability (solid, gas):	Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.

- CONTINUED ON NEXT PAGE -

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Autoignition temperature:	500 ºF
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *
Particle characteristics:	
Median equivalent diameter:	Non-applicable

9.2 Other information:

Information with regard to physical hazard classes:

Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *
Corrosive to metals:	Non-applicable *
Heat of combustion:	Non-applicable *
Aerosols-total percentage (by mass) of flammable components:	Non-applicable *
Other safety characteristics:	
Surface tension at 68 ºF:	Non-applicable *
Refraction index:	Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

10.2 Chemical stability:

Chemically stable under the conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Not applicable	Not applicable	Avoid alkalis or strong bases

10.6 Hazardous decomposition products:

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO2), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

The experimental information related to the toxicological properties of the product itself is not available

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:
A- Ingestion (acute effect):

- CONTINUED ON NEXT PAGE -

SECTION 11: TOXICOLOGICAL INFORMATION (continued)

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, however it does contain substances classified as dangerous for this effect. For more information see section 3.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for skin contact. For more information see section 3.
- Contact with the eyes: Based on available data, the classification criteria are not met, however it does contain substances classified as dangerous for this effect. For more information see section 3.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- Carcinogenicity: Exposure to this product can cause cancer. For more specific information on the possible health effects see section 2.
  IARC: Distillates (petroleum), solvent-refined heavy paraffinic (3); Distillates (petroleum), hydrotreated light paraffinic, < 3% DMSO (> 20.5 cSt 40ºC) (3); Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC (3)
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensitising effects. For more information see section 3.
- Cutaneous: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous with sensitising effects. For more information see section 3.

F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

H- Aspiration hazard:

The consumption of a considerable dose can cause pulmonary damage.

Other information:

Non-applicable

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS: 72623-87-1	LD50 oral	5100 mg/kg	Rat
	LD50 dermal	5100 mg/kg	Rabbit
	LC50 inhalation	Non-applicable	
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts CAS: 68649-42-3	LD50 oral	3080 mg/kg	Rat
	LD50 dermal	Non-applicable	
	LC50 inhalation	Non-applicable	
Distillates (petroleum), solvent-refined heavy paraffinic CAS: 64741-88-4	LD50 oral	5100 mg/kg	Rat
	LD50 dermal	Non-applicable	
	LC50 inhalation	Non-applicable	

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SECTION 12: ECOLOGICAL INFORMATION

The experimental information related to the eco-toxicological properties of the product itself is not available

12.1 Ecotoxicity (aquatic and terrestrial, where available):

Acute toxicity:

Identification	Concentration		Species	Genus
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS: 72623-87-1	LC50	5000 mg/L (96 h)	Oncorhynchus mykiss	Fish
	EC50	1000 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	1000 mg/L (96 h)	Scenedesmus subspicatus	Algae
Distillates (petroleum), solvent-refined heavy paraffinic CAS: 64741-88-4	LC50	5000 mg/L (96 h)	Oncorhynchus mykiss	Fish
	EC50	1000 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	1000 mg/L (96 h)	Scenedesmus subspicatus	Algae

12.2 Persistence and degradability:

Not available

12.3 Bioaccumulative potential:

Identification	Bioaccumulation potential	
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS: 72623-87-1	BCF	
	Pow Log	3.9
	Potential	
Distillates (petroleum), solvent-refined heavy paraffinic CAS: 64741-88-4	BCF	
	Pow Log	3.9
	Potential	

12.4 Mobility in soil:

Not available

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations. In case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See epigraph 6.2.

Regulations related to waste management:

Legislation related to waste management:

40 CFR Part 261- IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

SECTION 14: TRANSPORT INFORMATION

This product is not regulated for transport.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

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SECTION 15: REGULATORY INFORMATION (continued)

SARA Title III - Toxic Chemical Release Inventory Reporting (Section 313): Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts
California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986): Non-applicable
The Toxic Substances Control Act (TSCA) : Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based ; Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC ; Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts ; Distillates (petroleum), solvent-refined heavy paraffinic ; Sulfonic acids, petroleum, calcium salts (TBN < 300)
Massachusetts RTK - Substance List: Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts
New Jersey Worker and Community Right-to-Know Act: Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts
New York RTK - Substance list: Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts
Pennsylvania Worker and Community Right-to-Know Law: Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts
CANADA-Domestic Substances List (DSL): Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based ; Distillates (petroleum), hydrotreated heavy paraffinic , < 3 % IP 346, < 20.5 cSt @ 40ºC ; Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts ; Distillates (petroleum), solvent-refined heavy paraffinic ; Sulfonic acids, petroleum, calcium salts (TBN < 300)
CANADA-Non-Domestic Substances List (NDSL): Non-applicable
NTP (National Toxicology Program): Non-applicable
Minnesota - Hazardous substances ERTK: Non-applicable
Rhode Island - Hazardous substances RTK: Non-applicable
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096): Non-applicable
Hazardous Air Pollutants (Clean Air Act): Non-applicable
Hazardous substances release notification under CERCLA sections 102-103 (40 CFR Part 302): Non-applicable

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation:

Take into consideration other applicable federal, state, and local laws and local regulations.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Appendix d to §1910.1200 - Safety data sheets

Texts of the legislative phrases mentioned in section 2:

H350: May cause cancer.
H304: May be fatal if swallowed and enters airways.

Texts of the legislative phrases mentioned in section 3:

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

29 CFR 1910.1200:

Asp. Tox. 1: H304 - May be fatal if swallowed and enters airways.
Carc. 1B: H350 - May cause cancer.
Eye Irrit. 2A: H319 - Causes serious eye irritation.
Skin Irrit. 2: H315 - Causes skin irritation.
Skin Sens. 1B: H317 - May cause an allergic skin reaction.

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

Occupational Safety & Health Administration (OSHA).

Abbreviations and acronyms:

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SECTION 16: OTHER INFORMATION (continued)

IMDG: International maritime dangerous goods code
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
COD: Chemical Oxygen Demand
BOD5: 5-day biochemical oxygen demand
BCF: Bioconcentration factor
LD50: Lethal Dose 50
CL50: Lethal Concentration 50
EC50: Effective concentration 50
Log-POW: Octanol-water partition coefficient
Koc: Partition coefficient of organic carbon
IARC: International Agency for Research on Cancer

END OF SAFETY DATA SHEET