



Safety Data Sheet

Prepared according to GHS

1. Identification

Product Name	Kensol® Bio 1512
Product Code	4201
Recommended Use or uses advised against	Lubricant
Company	American Refining Group, Inc. 77 North Kendall Avenue Bradford, PA 16701 www.amref.com msds@amref.com
Emergency Telephone Number(s)	Chemtrec 1-800-424-9300 (24 HRS) ARG: 814-368-1297 (24 HRS)

2. Hazards Identification

GHS Classification	Aspiration Hazard Category 1
Signal Word	DANGER!
Hazard Statements	May be fatal if swallowed and enters airways.
GHS Pictogram	

Precautionary Statements	If swallowed: immediately call a poison center/ doctor to specify the appropriate source of emergency medical advice. Do NOT induce vomiting.
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3. Composition / Information on Ingredients

CAS No.	Component	Percent
1581740-29-5	1,6,10- Dodecatriene, 7,11-dimethyl-3-methylene-, (6E)-, hydrogenated	15-55
3891-98-3	Farnesane	25-65
112-41-4	Dodec-1-ene	0-35
1120-36-1	Tetradec-1-ene	0-35
629-73-2	Hexadec-1-ene	0-35
1472005-85-8	Alkenes, C10-16-, mixed with (6E)-7, 11-dimethyl-3-methylene-1,6,10-dodecatriene, dimers and trimers hydrogenated	0-10

4. First Aid Measures

Eyes	If easy to do, remove contact lenses. Immediately flush eyes with copious quantities of water for a minimal of 15 minutes. If irritation persists, call physician.
Skin	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. If irritation persists, get medical attention immediately.
Inhalation	Immediately move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
Ingestion	DO NOT INDUCE VOMITING. If conscious, rinse out mouth with water. Seek medical attention immediately.
Symptoms(Acute and delayed) Note to Physicians	May be fatal if swallowed and enters airways. Treat symptomatically and supportively. If accidental exposure occurs to an individual who is also taking one or more concomitant medications, consult the respective package or prescribing information for potential drug interactions.

5. Fire Fighting Measures

Suitable Extinguishing Media

Use dry chemical, CO₂, water spray (FOG) or foam

Unsuitable Extinguishing Media

Avoid solid water stream as it may scatter and spread fire.

Specific Hazards Arising from Chemical

No information identified. May emit toxic fumes of carbon monoxide and carbon dioxide. Vapors may form explosive mixtures with air.

Protective Equipment and Precautions for Firefighters

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

6. Accidental Release Measures

Personal Precautions

Put on appropriate personal protective equipment. Area should be adequately ventilated.

Environmental Precautions

Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods for Containment

Stop leak if without risk.

Methods for Cleanup

Cover liquid spill with sand, earth or other noncombustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading. Pick up and transfer to properly labeled container

7. Handling and Storage

Handling Procedures

7. Handling and Storage

Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Use non-sparking tools.

Shipping and Storing Procedures

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat. Protect from light. Keep in properly labeled containers. Keep out of the reach of children. Do not store in heat or direct sunlight

8. Exposure Controls / Personal Protection

Engineering Controls

Selection and use of containment devices and personal protective equipment should be based on a risk assessment of exposure potential. Use local exhaust and/or enclosure at mist/aerosol/spray-generating point. High-energy operations such as spraying should be done within an approved emission control or containment system.

Eye/Face Protection

Chemical goggles or face shield.

Skin Protection

Chemical resistant, impervious gloves complying with an approved standard should be worn at all times. Coveralls, apron, and boots as necessary to minimize contact.

Respiratory Protection

Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. An approved and properly fitted air-purifying respirator with HEPA filters should provide ancillary protection based on the known or foreseeable limitations of existing engineering controls. Use a powered air-purifying respirator equipped with HEPA filters or combination filters or a p

General Hygiene

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing.

9. Physical and Chemical Properties

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Please see the Product Specification Sheet for further information.

Appearance	Clear to pale yellow	Flammability	Not Available
Physical State	Liquid	Upper/Lower Flammability Limits	Not Available
Odor	Paraffinic	Vapor Pressure(20°C mm Hg)	0.00
Odor Threshold	Not Available	Vapor Density	Not Available
pH	Not Available	Relative Density (g/ml)	.775
Melting/Freezing Point (°F)	Not Available	Water Soluble	No
Initial Boiling Point (°F)	396	Partition Coefficient: n-octanol/water	Not Available

9. Physical and Chemical Properties			
Boiling Range (°F)	Not Available	Auto-ignition Temperature (°F)	Not Available
Flash Point (°F) Cleveland Open Cup ASTM D-92	223	Decomposition Temperature (°F)	Not Available
Evaporation Rate	Not Available	Viscosity (40°C mm²/s)	1.-2.4
Volatile Organic Compounds (g/L)	Not Available	Aromatic Content (Typical Mass %)	Not Available

10. Chemical Stability & Reactivity Information
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Reactivity	No information identified
Chemical Stability	Stable under normal conditions
Hazardous Reactions	Not expected to occur.
Conditions to Avoid	High temperatures, flames, sparks
Incompatibility	Strong acids and oxidizing materials
Hazardous Decomposition Products	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion.

11. Toxicological Information

Acute Toxicity

Compound	Type	Route	Species	Dose
1,6,10-Dodecatriene, 7,11 –dimethyl-3-methylene-, (6E)-, hydrogenated	--	--	--	--
Farnesane	LC50 LD50 LD50	Inhalation Oral Dermal	Rat Rat Rabbit	>2.19mg/L >5000 mg/kg >5000 mg/kg
Dodec-1-ene	--	--	--	--
Tetradec-1-ene	--	--	--	--
Hexadec-1-ene	--	--	--	--
Alkenes, C10-16-, reaction products with (6E)-7, 11-dimethyl-3-methylene-1, 6,10-dodecatriene, dimers and trimers hydrogenated	None	None	None	None

Irritation/Corrosion

In rabbits, farnesane was not considered and irritant under GHS or CLP. In *in vitro* eye and skin tests (MatTek Epicular MTT viability assay, MatTek Epiderm skin irritation test) farnesane was non-irritating. In human 48 hour patch testing, farnesane was considered non-irritating. In HRIPT, irritation was noted as the pure substance under highly localized and occluded conditions. At lower concentrations or with open application, mild to no irritation was observed; No irritation was observed at concentrations of up to 60%.

11. Toxicological Information

Sensitization	In three human repeated patch studies, farnesane was not considered to be a sensitizer ranging from concentrations of 20%-80%
Aspiration Hazards	If swallowed can be aspirated into lungs and cause chemical pneumonia, varying degrees of pulmonary injury or death. If swallowed, do NOT induce vomiting.
Target Organ Effects	No studies identified.
Carcinogenicity	No studies identified. This mixture is not listed by NTP, IARC, ACGIH or OSHA as a carcinogen.
Mutagenicity	No studies identified.
Reproductive Toxicity	No studies identified.
Teratogenicity	No studies identified.

12. Ecological Information

Compound	Type	Species	Concentration
1,6,10-Dodecatriene, 7,11 –dimethyl-3-methylene-, (6E)-, hydrogenated	--	--	--
Farnesane	96hEC50 NOEC (21 day)	<i>Pseudokirchneriella subcapitata</i> <i>Pimephales promelas</i>	>86ug/L 66 ug/L
	NOEC (21 day)	<i>Daphnia magna</i>	54 ug/L
Dodec-1-ene	72hEC50	Algae	>0.00093 mg/L (solubility)
	48hEC50	Daphnia	>0.0028 mg/L (solubility)
	96hLC50	Fish	>0.0034mg/l (solubility)
Tetradec-1-ene	72hEL50	Aquatic plants	>1000 mg/L
	48hEL50	Daphnia	>1000 mg/L
	96hLL50	Fish	>1000 mg/L
	28hNOEC	Microorganism	2 mg/L
Hexadec-1-ene	72hEL50	Aquatic plants	>1000 mg/L
	48hEL50	Daphnia	<1000 mg/L
	96hLL500	Fish	>1000 mg/L
	28dEC20	Microorganism	>4mg/L
Alkenes, C10-16-, reaction products with (6E)-7, 11-dimethyl-3-methylene-1, 6,10-dodecatriene, dimers and trimers hydrogenated	48hEL50	Daphnia	>100mg/L WAF

Additional toxicity information Based on the results from similar substances, farnesane is not expected to inhibit the activity of sewage sludge micro-organisms.

Persistence & Degradability

In a CO2-evolution ready biodegradability tests (OECD301B), farnesane degradation was between 12-44% by 28 days. In addition, modelled data (EpiSuite c 4.11, BIOWIN v4.10 and BioHCW in v1.01), predict that farnesane will not be readily biodegradable, that it will be ultimately biodegradable in a period of weeks to months and that the half-life is 22 days. The measured half-life in a sea water biodegradation study was 3.5 days (CONCAWE). Dodec-1-ene and hexadec-1-ene are readily biodegradable and show a low bioaccumulation potential.

Bioaccumulation Potential

Farnesane predicted range 1074 to 1944 L/kg wet-wt by modelling (EpiSuite v4.11 and BCFBAF v3.01. Based on predicted values of less than 2000L/kg wet-wt farnesane is not expected to bio accumulate.

Soil Mobility

Not expected to be mobile in soil. Predicted log Koc:5.8-6.6 (Kowwin method).

Other Adverse Effects

No data Available

13. Disposal Considerations

Disposal Instructions

The generation of waste should be avoided or minimized wherever possible. Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14. Transportation Information

Emergency Response Guide No.	171	<i>North American Emergency Response Guide Book</i>			
UN Number	Shipping Name (technical name)	Hazard Class	Packing Group	Placard/ Label	
U.S. DOT	Not Regulated				
IMDG	Not Regulated				

15. Regulatory Information

SARA Extremely Hazardous Substances (Sections 302 & 304)

This product does not contain greater than 1% of any “extremely hazardous substances” listed pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 302 or Section 304 as identified in 40 CFR Part 355, Appendix A and B.

SARA Section 313

This product does not contain greater than 1.0% of the substances subject to the reporting requirements of Section 313 of Title III of the

15. Regulatory Information

Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

SARA Section 311 & 312 Classifications

Physical Hazards No

Health Hazards Yes

Aspiration Hazard

CERCLA

This product does not contain any “hazardous substances” listed under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) in 40 CFR Part 302, Table 302.4.

California Prop 65

This product is not routinely tested to determine chemical(s) known to the state of California to cause cancer and/or birth defects based on maximum impurity levels of components.

California Air Resource Board (CARB)

This product is considered a Low Vapor Pressure – Volatile Organic Compound (LVP-VOC) according to the CARB. This product meets one of the following requirements in order to be considered a LVP-VOC:

(A) has a vapor pressure less than 0.1 mm Hg at 20°C, as determined by ARB Method 310; or

(B) is a chemical “compound” with more than 12 carbon atoms, or a chemical “mixture” comprised solely of “compounds” with more than 12 carbon atoms, as verified by formulation data, and the vapor pressure and boiling point are unknown; or

(C) is a chemical “compound” with a boiling point greater than 216°C, as determined by ARB Method 310; or

(D) is the weight percent of a chemical “mixture” that boils above 216°C, as determined by ARB Method 310.

California Air Resource Board (CARB) Bin Number

20

Global Chemical Inventories

16. Other Information

US NFPA Ratings

Health	Fire	Reactivity
0	1	0

HMIS Ratings

Health	Fire	Physical Hazards
0	1	0

Revision Date

26 January 2017

16. Other Information

Revision Reason

New SDS

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

End of SDS