

SAFETY DATA SHEET**SECTION 1. IDENTIFICATION****Product identifier used on the label**: **Vesta™ 2000****Product Code(s)** : Not available.**Recommended use of the chemical and restrictions on use**: Fuel additive
Use pattern: Professional Use Only
Restriction on use: None known**Chemical family** : Mixture**Name, address, and telephone number of the supplier:****Hull Partners LLC**9111 E Lost Hill Trail
Lone Tree, CO,
80124

Supplier's Telephone # : 303-618-5310 8 am to 5 pm MST

24 Hr. Emergency Tel # : INFOTRAC: (800) 535-5053 (Within Continental US and Canada); (352)323-3500 (International)**Name, address, and telephone number of the manufacturer:**

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION**Classification of the chemical**

Clear yellow liquid. Menthol odor.

This material is classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2015)

Hazard classification:

Flammable Liquids - Category 2

Organic peroxides -Category E

Germ Cell Mutagenicity - Category 2

Label elements*Hazard pictogram(s)**Signal Word*

WARNING!

*Hazard statement(s)*Highly flammable liquid and vapor.
Heating may cause a fire.
Suspected of causing genetic defects.

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Precautionary statement(s)

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 Keep container tightly closed.
 Use only non-sparking tools.
 Ground/Bond container and receiving equipment.
 Take precautionary measures against static discharge.
 Use explosion-proof electrical and ventilating equipment.
 Keep/Store away from clothing and other combustible materials.
 Keep only in original container.
 Wear protective gloves/clothing and eye/face protection.

IF exposed or concerned: Get medical advice/attention.
 In case of fire: Use water spray or fog to extinguish.

Store in a well-ventilated place. Keep cool.
 Store locked up.
 Protect from sunlight.
 Store away from other materials.
 Store at temperatures not exceeding 38°C/100°F

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

Other hazards which do not result in classification:

May cause skin and respiratory irritation. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Direct eye contact may cause slight or mild, transient irritation. May be an aspiration hazard.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
tert-Dibutyl peroxide	DTBP	110-05-4	100.00

The exact concentrations of the above listed chemicals are being withheld as a trade secret as allowed by 29CFR1910.1200.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Call a physician or poison control centre immediately. Induce vomiting ONLY under the direct supervision of qualified medical personnel or a poison control centre. Never give anything by mouth to an unconscious person.
- Inhalation* : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. Get medical attention if symptoms persist.
- Skin contact* : For skin contact, flush with water for at least 15 minutes, while removing contaminated clothing. If irritation persists, seek prompt medical attention. Launder clothing before reuse.
- Eye contact* : Flush with large amounts of water for 15 minutes. If irritation persists, seek prompt medical attention.

Most important symptoms and effects, both acute and delayed

- : Direct skin contact may cause slight or mild, transient irritation. Inhalation of high concentrations may cause dizziness, disorientation, incoordination, narcosis, nausea or narcotic effects. Direct eye contact may cause slight or mild, transient irritation. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Suspected of causing genetic defects.

Indication of any immediate medical attention and special treatment needed

- : Treat symptomatically.

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SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Use flooding quantities of water to fight fires.

Unsuitable extinguishing media

: Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

: Highly flammable liquid and vapor. Burning produces obnoxious and toxic fumes. Vapors are heavier than air and may spread along floors.

Flammability classification (OSHA 29 CFR 1910.106)

: Flammable Liquids - Category 2

Hazardous combustion products

: Carbon oxides and other irritating fumes and smoke.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Special fire-fighting procedures

: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

Methods and material for containment and cleaning up

: Ventilate the area. Stop spill or leak at source if safely possible. Dike for water control. Use only non-sparking tools. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13).

Special spill response procedures

: If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
US CERCLA Reportable quantity (RQ): None.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/clothing and eye/face protection. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use explosion-proof electrical and ventilating equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Keep only in original container. Keep container tightly closed. Avoid contact with eyes, skin and clothing. Keep away from combustible material.

Conditions for safe storage : Store in a cool, dry, well-ventilated area. Store away from areas of excessive heat, open flames, sparks, and other possible sources of ignition. Keep away from incompatibles. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Protect from sunlight. Store away from other materials. Maximum storage temperature: 38°C /100°F.

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Incompatible materials : Strong oxidizers (e.g. Chlorine, Peroxides, etc.). ;Acids ;Metals (e.g. Aluminum, brass, copper); Reducing agents.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:				
Chemical Name	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
tert-Dibutyl peroxide	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

: Use sufficient mechanical ventilation to maintain exposures below the TLV. Use local exhaust if mist or spray is generated. Use explosion-proof electrical and ventilating equipment.

Respiratory protection

: Respiratory protection is required if the concentrations exceed the TLV. NIOSH-approved respirators are recommended. Seek advice from respiratory protection specialists. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Skin protection

: Wear protective gloves/clothing. Advice should be sought from glove suppliers.

Eye / face protection

: Wear eye/face protection. Wear safety glasses with side shields (or goggles).

Other protective equipment

: Emergency showers and eyewash facilities should be nearby. Wear a chemically resistant apron and long sleeves when dispensing, to prevent skin contact.

General hygiene considerations

: Avoid breathing mist or vapor. Avoid contact with eyes, skin and clothing. When using do not eat or drink. When using do not smoke. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Clear yellow liquid.

Odour : Menthol

Odour threshold : N/Av

pH : N/Av

Melting/Freezing point : -37 °C (-35°F)

Initial boiling point and boiling range

: 111°C (232°F)

Flash point : <8°C (46°F)

Flashpoint (Method) : Seta closed cup

Evaporation rate (BuAe = 1) : N/Av

Flammability (solid, gas) : Not applicable.

Lower flammable limit (% by vol.)

: <1%

Upper flammable limit (% by vol.)

: >70%

Oxidizing properties : None known.

Explosive properties : Not explosive

Vapour pressure : 19.510 mmHg

Vapour density : Not available.

Relative density / Specific gravity

: 0.79

Solubility in water : Insoluble.

Other solubility(ies) : Not available.

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Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: Not available.
Auto-ignition temperature : 160°C (320°F)
Decomposition temperature : 130°C (266°F)
Viscosity : 1.15 mPa.s
Volatiles (% by weight) : No information available.

Volatile organic Compounds (VOC's)

: N/Av

Absolute pressure of container

: N/Av

Flame projection length : N/Av

Other physical/chemical comments

: None known or reported by the manufacturer.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions

: No dangerous reaction known under conditions of normal use.

Conditions to avoid : Avoid heat, sparks, open flames and other ignition sources. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials. Avoid contact with combustible material (paper, wool, oil). Protect from sunlight.

Incompatible materials : See Section 7 (Handling and Storage) for further details.

Hazardous decomposition products

: None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption
: YES

Potential Health Effects:**Signs and symptoms of short-term (acute) exposure***Sign and symptoms Inhalation*

: Inhalation of high concentrations may cause dizziness, disorientation, incoordination, narcosis, nausea or narcotic effects. May cause respiratory irritation.

Sign and symptoms ingestion

: Ingestion can cause gastrointestinal irritation, nausea, and diarrhea.

Sign and symptoms skin

: Direct skin contact may cause temporary redness.

Sign and symptoms eyes

: Direct eye contact may cause slight or mild, transient irritation.

Potential Chronic Health Effects

: Symptoms may include redness, edema, drying defatting and cracking of the skin.

Mutagenicity : This material is classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2012). Classification: Germ Cell Mutagenicity - Category 2. Suspected of causing genetic defects.

Carcinogenicity : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Sensitization to material : Not expected to be a skin or respiratory sensitizer.

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Specific target organ effects : This material is not classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2012).

Medical conditions aggravated by overexposure

: None known or reported by the manufacturer.

Synergistic materials

: Not available.

Toxicological data

: There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
tert-Dibutyl peroxide	>22.6mg/L	>25 g/kg	>2000 mg/kg

Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : See the following tables for individual ingredient ecotoxicity data. Do not allow material to contaminate ground water system.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC50 / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
tert-Dibutyl peroxide	110-05-4	>73.1mg/L	N/Av	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Daphnia</u>		
		<u>EC50 / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
tert-Dibutyl peroxide	110-05-4	15 mg/L	N/Av	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Algae</u>		
		<u>EC50 / 96h or 72h</u>	<u>NOEC / 96h or 72h</u>	<u>M Factor</u>
tert-Dibutyl peroxide	110-05-4	N/Av	N/Av	None.

Persistence and degradability

: No data is available on the product itself.

Bioaccumulation potential

: No data is available on the product itself.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
tert-Dibutyl peroxide (CAS 110-05-4)	3.2	60.3

Mobility in soil : No data is available on the product itself.

Other Adverse Environmental effects

: No data is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle waste according to recommendations in Section 7.



Methods of Disposal

: Dispose in accordance with all applicable federal, state, provincial and local regulations.

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RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	UN3107	ORGANIC PEROXIDE TYPE E, LIQUID (Di-tert-butyl peroxide)	5.2	II	
49CFR/DOT Additional information	May not be shipped as a Limited Quantity. See 49CFR 173.225 for information.				
TDG	UN3107	ORGANIC PEROXIDE TYPE E, LIQUID (Di-tert-butyl peroxide)	5.2	II	
TDG Additional information	Please consult the TDG guidelines for further information.				

Special precautions for user : Keep away from heat, sparks and open flame. - No smoking.
Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
 : Not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
tert-Dibutyl peroxide	110-05-4	Yes	N/Ap	N/Av	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Flammable ;Organic peroxides; Germ cell mutagenicity. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
tert-Dibutyl peroxide	110-05-4	No	N/Ap	No	Yes	No	Yes	Yes	Yes

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Canadian Information:

WHMIS Classification: Refer to Section 2 for a WHMIS Classification for this product.

All ingredients are present on the DSL.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	<u>CAS #</u>	<u>European EINECS</u>	<u>Australia AICS</u>	<u>Philippines PICCS</u>	<u>Japan ENCS</u>	<u>Korea KECI/KECL</u>	<u>China IECSC</u>	<u>NewZealand IOC</u>
tert-Dibutyl peroxide	110-05-4	203-733-6	Present	Present	(4)-367; (3)-367; (2)-367	KE-03082	Present	HSR001373

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
 CA: California
 CAS: Chemical Abstract Services
 CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
 CFR: Code of Federal Regulations
 CNS: Central Nervous System
 COC: Cleveland Open Cup
 CSA: Canadian Standards Association
 DOT: Department of Transportation
 EPA: Environmental Protection Agency
 HMIS: Hazardous Materials Identification System
 HSDB: Hazardous Substances Data Bank
 IARC: International Agency for Research on Cancer
 Inh: Inhalation
 LC: Lethal Concentration
 LD: Lethal Dose
 MA: Massachusetts
 MN: Minnesota
 N/Ap: Not Applicable
 N/Av: Not Available
 NFPA: National Fire Protection Association
 NIOSH: National Institute of Occupational Safety and Health
 NJ: New Jersey
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 PA: Pennsylvania
 PEL: Permissible exposure limit
 RCRA: Resource Conservation and Recovery Act
 RI: Rhode Island
 RTECS: Registry of Toxic Effects of Chemical Substances
 SARA: Superfund Amendments and Reauthorization Act
 STEL: Short Term Exposure Limit
 TLV: Threshold Limit Values
 TWA: Time Weighted Average
 WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2016
 2. International Agency for Research on Cancer Monographs, searched 2017
 3. Canadian Centre for Occupational Health and Safety, CInfoWeb databases, 2017(Chempendium, HSDB and RTECs).
 4. Material Safety Data Sheets from manufacturer.
 5. US EPA Title III List of Lists - 2017 version.
 6. California Proposition 65 List - 2017 version.
 7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal,2017.

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Preparation Date (mm/dd/yyyy)

: 04/17/2017

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p><u>Prepared for:</u> Hull Partners LLC 9111 E. Lost Hill Trail Lone Tree, CO 80124 303-618-5310</p>	
<p><u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.); (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	

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