SECTION I- Chemical Product and Company Identification

Product Identifier: **GEN 49D with Cetane Improver**

Supplier: Maryn International Ltd.
Bay 5, 4216 – 54th Ave. SE
Calgary, Alberta T2C 2E3
Canada

Product use: Diesel Fuel Lubricant

Emergency Phone Number:

CANUTEC – 24 hr Emergency No. **1-613-996-6666**
Business Hour Number **1-403-252-2239**
(Monday through Friday 8:00am to 4:30pm MST)

SECTION II Composition/ Information on Ingredients

Material	Concentration %	C.A.S. #
Detergent	<10	Proprietary
Proprietary Polymers	5 – 15	Proprietary
2-Ethylhexyl Nitrate	30 – 50	27247-96-7
Xylene* (Ethylbenzene)*	<5 (<1)	1330-20-7 100-41-4
Heavy Aromatic Naptha (Naphthalene)*	30 – 50 (<5)	64742-94-5 91-20-3
Diethylene Glycol Monomethyl Ether*	<5	111-77-3
Light Ends of Polyethylbenzene Residue	<2	178535-25-6

*Disclosure as a toxic chemical is required under Section 313 of Title III of the superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

SECTION III Hazards Identification

Emergency Overview Combustible liquid.

Potential Health Effects

Route of entry Skin contact, skin adsorption, eye contact, inhalation and ingestion.

Eye Contact May cause eye irritation with discomfort, tearing, or blurring of vision.

Skin Contact Skin contact with the product may cause skin irritation with redness and swelling. Prolonged exposure may result in product being absorbed through the skin in toxic amounts and/or skin sensitization.

Inhalation May initially include irritation of the upper respiratory passages with coughing and discomfort. In general, overexposure to high atmospheric concentrations of alkyl-substituted aromatics may cause headache, weakness, loss of appetite, nervous system depression with anesthetic effects such as dizziness, headache, confusion, incoordination, nausea and loss of consciousness. Aspiration (liquid enters lung), may cause lung

damage due to chemical pneumonia, a condition cause by petroleum-like solvents.

Ingestion Aspiration hazard: Small amounts aspirated into the lungs during ingestion or vomiting may cause lung injury, leading to death. Symptoms of aspiration into the lungs include coughing, gasping, shortness of breath, bluish discolored skin, rapid breathing, and heart rate. Individuals with preexisting diseases of the kidneys or liver may have increased susceptibility to the toxicity of excessive exposures. Chemical pneumonitis from aspiration may result in fever. Pulmonary edema or bleeding, drowsiness, confusion, coma, and seizures may occur in more serious cases. Symptoms may develop immediately or as late as 24 hours after exposure.

SECTION IV First Aid Measures

Ingestion Seek immediate medical attention. If swallowed, **DO NOT** induce vomiting. Allow victim to rinse his mouth and then to drink 2 – 4 cupfuls of water. Never give anything by mouth to an unconscious person. Call a physician.

Skin Flush skin with water for at least 15 minutes after contact. Wash contaminated clothing before re-use.

Inhalation If inhaled, remove to fresh air. If symptoms persist, get medical attention. If not breathing,
give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Eye Contact In case of contact immediately flush eyes with plenty of water for at least 15 minutes or until the chemical is removed. Call a physician.

Notes to Physician Activated charcoal mixture may be administered. To prepare activated charcoal mixture, suspend 50 grams activated charcoal in 400mL water and mix thoroughly. Administer 5mL/kg or 350mL for an average adult. Because of the danger of aspiration, emesis or gastric lavage should not be employed unless the risk is justified by the presence of additional toxic substances. Activated charcoal may induce vomiting, but may be given after emesis or lavage to absorb toxic additives. Steroid therapy in mild to moderate cases does not improve outcome. Bacterial pneumonia often occurs after exposure but prophylactic antibiotics are not indicated and should be reserved for documented bacterial pneumonia.

SECTION V Fire-Fighting Measures

Flammability **Combustible liquid:** Can form combustible mixtures at temperatures at or above the flash point.

Means of Extinction **Foam, CO_2, water spray, dry chemicals.**
Keep containers cool with water spray. When fighting fire, wear full protective clothing, including NIOSH approved self-contained breathing apparatus. Avoid spreading with water flooding. Fire fight from maximum distance, as heat may decompose material and rupture containers.

Flash Point (ASTM D92) 63.9°C (147°F) PMCC

Upper Flammability Limits	Not Determined.
Lower Flammability Limits	Not Determined.
Hazardous Combustion Products	Carbon monoxide and nitrogen oxides.
NFPA Rating	HEALTH 2, FLAMMABILITY 2, REACTIVITY 1
HMIS Rating	HEALTH 2, FLAMMABILITY 2, REACTIVITY 1

SECTION VI Accidental Release Measures

Personal Protection	Wear suitable protective equipment. Eliminate sources and or potential sources of ignition.
Environmental Precautions	Dike spill. Do not flush to sewers, streams or other bodies of water. For disposal, see Section XIII.
Methods for cleaning up	Combustible. Isolate hazard area and restrict access. Spills are very slippery and should be cleaned up promptly. Absorb on inert material such as sawdust, sand, oil dry, vermiculite or other absorbent material. Sweep up and collect in a suitable container for disposal. Observe government regulations.
Large spills	Stop leak if without risk. Dike to contain spill. Pump excess material into suitable container (metal drums, metal tanks, or such). Unless released material is cleaned up immediately for reprocessing, recycling, or reuse a release of 100 lbs may trigger reporting requirements for CERCLA Section 103.

SECTION VII Handling and Storage

Handling	Handle and open containers with care. Avoid excess heat, formation of oil mist, breathing vapours and mist from hot oil, and prolonged or repeated contact with skin. Keep away and do NOT handle near heat, sparks, flames or other sources of ignition. Fixed equipment as well as transfer containers should be grounded to prevent accumulation of static charge.
Storage	Store in a cool, dry, and well ventilated place. Keep container tightly closed. Keep away from incompatible materials.

SECTION VIII Exposure Controls / Personal Protection

Engineering Controls	Use only with adequate ventilation. If user's operation generates mist, use ventilation to keep exposure to airborne contaminants below exposure limits. Make up air should always be supplied to balance air removed by exhaust ventilation. Keep container tightly closed.
Respiratory Protection	Use NIOSH/MSHA approved respirator if vapor concentration exceeds permissible exposure limit. Use Self-Contained Breathing Apparatus in high vapour concentrations.
Eye Protection	Chemical goggles; also wear a face shield if splashing exists.
Skin Protection	Wear as appropriate, apron, pants, hood, and jacket if potential for skin contact.
Hand Protection	Use impervious gloves, oil resistant.

Material	Exposure Limits
Napthalene	PEL (OSHA) – 10ppm, 50mg/m^3, 8hr, TWA TLV (ACGIH) – 10ppm, 52mg/m^3, 8hr, TWA, Skin; A4 STEL 15ppm, 79mg/m^3, A4
Ethylbenzene	PEL (OSHA) – 100ppm, 435mg/m^3, 8hr, TWA TLV (ACGIH) – 100ppm, 434mg/m^3, 8hr, TWA, A3, BEI, STEL 125ppm, 543mg/m^3
2-Ethylhexyl Nitrate	AEL – 5ppm, 8 & 12hr, TWA
Xylene	PEL (OSHA) – 100ppm, 435mg/m^3, 8hr, TWA TLV (ACGIH) – 100ppm, 434mg/m^3, 8hr, TWA, STEL 150ppm, 651mg/m^3, A4; BEI AEL – 100ppm, 8 & 12hr, TWA, skin, 150ppm, 15minute, TWA
Heavy Aromatic Naptha	AEL – 50ppm, 300mg/m^3, 8hr, TWA

SECTION IX Physical and Chemical Properties

Physical State: Liquid
Odor: Aromatic
Appearance: Clear, Amber
Odor Threshold: Not established
Specific Gravity: 0.939 at 16°C (60.8°F)
Vapor Pressure: Not available
Vapor Density: Not available
Evaporation Rate: Not available
Boiling Point: Not available
Pour Point: -40°C (-40°F)
Solubility in Water: <5 wt%
pH: Not determined
Partitioning Coefficient: Not determined

SECTION X Stability and Reactivity

Chemical Stability: Stable to normal temperatures and storage conditions.
Incompatibility: None reasonably foreseeable.
Polymerization: Will not occur.
Decomposition Products: Decomposes with heat. Hazardous gases/vapours produces are oxides of nitrogen and carbon monoxide. Decomposition temperature is >100°C (212°F)

SECTION XI Toxicological Information

Material	LD_{50} (species/route)	LC_{50} (species/route)
Detergent	660mg/kg rabbit skin 3990mg/kg rat oral	NA

Napthalene	10000mg/kg rabbit skin 1780mg/kg rat oral	>0.34mg/L rat inhalation 15 minute
2-Ethylhexyl Nitrate	>4820mg/kg rabbit skin >9640 mg/kg rat oral	>639ppm rat inhalation 1hr
Xylene (mixed isomers)	4320mg/kg rabbit skin 4500 mg/kg rat oral	6700ppm rat inhalation 4hr
Heavy Aromatic Naptha	>3160mg/kg rabbit skin >5000mg/kg rat oral	>11.67mg/L rat inhalation 6hr
Diethylene Glycol Monomethyl Ether	6.5g/kg rabbit skin 5.5g/kg rat (undiluted) oral	500mg rabbit skin/eye
Ethylbenzene	~15000mg/kg mice skin >3500mg/kg rats oral	>4000ppm rat inhalation 4hr

Dermal absorption of xylene in animals causes narcosis. Toxic effects described in animals by inhalation include upper respiratory irritation; central nervous system effects; behavioral effects; decreased weight gain; hearing loss; and effects on the blood, liver, kidneys, heart, spleen, lungs and bone marrow. By ingestion, xylene caused central nervous system effects decreased body weight and liver effects. Tests of xylene in animals demonstrate no carcinogenic activity. Xylene does not produce heritable genetic damage in animals or genetic damage in bacterial or mammalian cell cultures. Although abnormal sperm were observed after an interperitoneal injection in rats, xylene did not produce reproductive effects. Developmental toxicity was observed in animals exposed to xylene but only at concentration that were maternally toxic.

Heavy Aromatic Naphtha is a severe skin irritant, and is an eye irritant, but is not a skin sensitizer in animals. Repeated inhalation exposures caused reduced growth rate, respiratory tract irritation congestion in liver and spleen, changes in blood tests and equilibrium disturbances. No animal test reports are available to define carcinogenic, mutagenic, developmental or reproductive hazards.

The detergent is a severe skin ad eye irritant and is a skin sensitizer in animals. Effects of long term dermal exposures include hyperkeratosis and necrosis of the epidermis but no evidence of increased incidences of tumors. Repeated dietary administration of high doses produced depressed liver weights and body weight loss. Tests in animals demonstrate no carcinogenic activity. No animal test reports are available to define developmental or reproductive hazards. The Detergent does produce genetic damage in bacterial and mammalian cell cultures but has not been tested in animals.

2-Ethylhexyl Nitrate is not a skin and eye irritant, but is untested for animal sensitization. Single ingestion exposure produced weight loss, diarrhea, incoordination and prostration. Repeated inhalation exposures produced weight loss and increased liver weight. No animal test reports are available to define carcinogenic, mutagenic developmental or reproductive hazards.

Carcinogenicity
Ethylbenzene and Napththalene have been classified by the Internal Agency for Research on Cancer (IARC) as possibly carcinogenic to humans (Group 2B). This IARC classification was based upon limited evidence of carcinogenicity to animals and inadequate evidence of carcinogenicity to humans.

SECTION XII Ecological information

Heavy Aromatic Naphtha:
96 hours LC50, Fathead minnow: 4.2 – 20.8 mg/L

2-Ethylhexyl Nitrate:
24 hour LC50, Trout: 145 mg/L
48 hour LC50, Trout: 116 mg/L
24 hour LC50, Bluegill: 6.5 mg/L
48 hour LC50, Bluegill: 6.0 mg/L
Xylene
96 hour LC50 Fathead minnow: 27 - 42 mg/L

SECTION XIII Disposal Consideration

Waste Disposal
Dispose of waste material in compliance with all federal, state, provincial and local regulations. Incinerate in a furnace or bury in an approved landfill where permitted under appropriate federal, provincial and local regulations.

SECTION XIV Transport Information

DOT Shipping Name:	Combustible Liquid, n.o.s. (2-Ethylhexyl Nitrate)
DOT Hazard Class:	3
UN/NA Number:	NA 1993
Packing Group:	III
DOT Reportable Quantity:	Not regulated in containers <119 gallons
DOT/TDG Labels:	**Primary:** None required
DOT/TDG Placards:	None required
Marine Pollutant:	Yes

TDG (Canada) Shipping Name:	Environmentally Hazardous Substance, liquid, n.o.s. (2-Ethylhexyl Nitrate)
TDG Hazard Class:	9
UN Number:	UN 3082
Packing Group:	III
Marine Pollutant:	Yes
Special Information:	Regulated for marine transportation only. If transported by road or rail, this product is not TDG regulated.

IMO Proper Shipping Name:	Environmentally Hazardous Substance, Liquid, n.o.s. (2-Ethylhexyl Nitrate)
Hazard Class:	9
UN Number:	3082
Packing Group:	III
IMO Label	Miscellaneous Dangerous Goods
Marine Pollutant:	Yes

Reportable Quantity	
Naphthalene	100lbs.
Xylene	100lbs.

Shipping Containers
Steel Drums UN1A1/Y/100

SECTION XV Regulatory Information

CPR Compliance: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.
OSHA Hazard Communication Standards 29CFR 1910.1200: This product is assessed in accordance with OSHA 29CFR 1910.1200 and determined to be toxic and combustible.
WHMIS Classification: Class B3 Combustible Liquid, Class D2B material with other toxic effects.
SARA Title III Section 311, 312:

Acute	-	Yes
Chronic	-	Yes
Fire	-	Yes
Reactivity	-	Yes
Pressure	-	No

Chemical Inventory

Canada:	The ingredients of this product are on the DSL or the NDSL or exempt.
United States:	The ingredients of this product are on the TSCA.

SECTION XVI Other Information

HMIS Information

Degree of Hazard	HMIS Rating	
4= Severe	Health	2
3= Serious		
2= Moderate	Flammability	2
1= Slight		
0= Minimal	Reactivity	1

Revision Information

Prepared by:	Maryn Research Phone: 1-403-252-2239
Effective Date:	January 22, 2007
Supersedes:	May 3, 2005
Revision:	2