



Section 1 : Chemical Product and Company Identification		
1.1	Product identifiers	
	Product Name:	2 Ethyl Hexyl Nitrate
1.2	Other means of identification	
	Other names	Octyl nitrate, Nitric acid 2-ethylhexyl ester 2-Ethyl-1-hexylnitrate
	CAS No.	27247-96-7
	REACH No.	01-2119539586-27-0027
	EC number	248-363-6
	Index no.	
1.3	Recommended use of the chemical and restrictions on use	
	Identified uses	It can improve the cetane number of diesel oil, and the quality combusting of fuel oil, shorten the ignition time and lower the combustion point, It can also improve the thermo kinetic of vehicle and save the oil.
	Uses advised against	
1.4	Supplier's details	
	Company	Deepak Nitrite Ltd. Aaditya-I, Chhani Road, Vadodara - 390 024, India Manufacturing facilities at : Vadodara, Dahej, Roha, Taloja & Hyderabad. Web : www.godeepak.com E.mail : customer.dnl@godeepak.com
1.5	Emergency phone number	
		In case of Spill, Leak, Fire, Exposure, or Accident, Call CHEMTREC Within USA & Canada: +1-800-424-9300, Outside USA & Canada: +1 703-527-3887 Contact no. : +91-9904406400

Section 2 : Hazards Identification		
2.1	Classification of the substance or mixture	
	(Classification according to Regulation (EC) No 1272/2008) Health hazard: 0, Flammability: 2, Physical hazards: 0, Combustible liquid EC classification (Classification according to Directive 67/548/EEC) T; R8 Contact with combustible material may cause fire. R20 Harmful by inhalation R21 Harmful in contact with skin. R22. Harmful if swallow. R36 Irritating to eye. R37 Irritating to respiratory system. R38 Irritating to skin. N:Water Hazard Class 2 : R53 May cause long term adverse effects in the aquatic environment.	
2.2	Label elements including precautionary statements	
	Pictograms	 

	Signal word	Warning.
	Hazard statement(s)	H227 : Combustible liquid. H302 +312 : Harmful if swallowed or in contact with skin. H315 : Cause skin irritation. H319 : Cause serious eye irritation. H332 : Harmful if inhaled. H335 : May cause respiratory irritation. H411 : Toxic to aquatic life with long lasting effects.
Precautionary statement(s)		
	Prevention	P261 : Avoid breathing mist, spray, vapors. P264 : Wash hands thoroughly after handling. P270 : Do not eat, drink or smoke when using this product. P271 : Use only outdoors or in a well ventilated area. P280 : Use protective gloves/ protective clothing. P501 : Dispose of contents/ container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
	Response	P301+P312 : If swallowed : Call a doctor if you feel unwell. P304+P340 : If inhaled: Removed person to fresh air and keep comfortable for breathing. P312 : Call a doctor if you feel unwell. P330 : Rinse mouth.
	Storage	P403 + P235: Store in a well-ventilated place. Keep cool.
2.3 Other hazards which do not result in classification		
There is no additional information.		

Section 3 : Composition and Information on ingredients			
3.1 Substances			
Molecular formula	C ₈ H ₁₇ NO ₃		
Molecular weight	175.23 g/mol		
Component	CAS Number	EC number	Concentration
2-Ethyl Hexyl Nitrate	27247-96-7	248-363-6	> 99%

Section 4 : First Aid measures	
4.1 Description of necessary first-aid measures	
After inhalation	If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.
After skin contact	Wash off with soap and plenty of water. Remove contaminated clothing. Get medical attention immediately if irritation continues
After eye contact	Rinse thoroughly with plenty of water for at least 15 min. consult ophthalmologist.
If swallowed	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Note to Physician	Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
4.2 Most important symptoms / effects, acute and delayed	
In case of inhalation of decomposition product in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.	
4.3 Indication of immediate medical attention and special treatment needed	
None	

Section 5 : Firefighting measures	
5.1 Extinguishing Media	
Suitable extinguishing media	
Foam, Dry chemical powder, or carbon dioxide. Water spray (fog) or foam. Use water spray	

	to cool fire-exposed containers.
	Unsuitable extinguishing media
	Do not use water jet.
5.2	Specific hazards arising from the chemical
	Hazards on thermal decomposition, Carbon oxides and Nitrogen oxides produced
5.3	Special protective actions for fire-fighters
	Fight fire wear appropriate protective equipment and self-contained breathing apparatus. Move containers from fire area if this can be done without risk. When heated above 100 Deg. C may undergo a self-accelerating, exothermic reaction which causes a rapid rise in a temperature and pressure. Spray storage vessels with water to maintain temperature below 100 Deg. C

Section 6 : Accidental Release Measures	
6.1	Personal precautions, protective equipment and emergency procedures
	Use personal protective equipment. Avoid breathing vapor and mist. Ensure adequate ventilation. Evacuate personnel to safe areas. <i>For personal protection see section 8.</i>
6.2	Environmental precautions
	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
6.3	Methods and materials for containment and cleaning up
	Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. Store and dispose of according to local /national regulations (see section 13).
6.4	Reference to other sections
	Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

Section 7 : Handling and Storage	
7.1	Precautions for safe handling
	Wash hands and other exposed area with mild soap and water before eating, drinking, or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Use only outdoors or in a well-ventilated area. Avoid all eye and skin contact and do not breathe vapour and mist. Recommended Handling temp. max. 60 Deg. c For precautions see section 2.2.
7.2	Conditions for safe storage, including any incompatibilities
	Storage conditions : Keep container closed when not in use. Incompatible products : Strong bases, strong acids, Strong oxidizers. Incompatible materials : Sources of ignition. Direct sunlight. Storage area : Protected from direct sunlight in dry, cool, well ventilated area.

Section 8 : Exposure Control / Personal Protection									
8.1	Control parameters / Occupational Exposure limit values								
	DNEL(long term / dermal / systemic effects) : 1 mg/kg/day DNEL(long term / inhalation / systemic effects): 0.35 mg/m ³								
8.2	Exposure controls / Appropriate engineering controls								
	Use only with adequate ventilation. Engineering controls also need to keep gas, vapor concentration below any lower explosive limit. Use explosion- proof ventilation equipment.								
8.3	Individual protection measures, such as Personal Protective Equipment (PPE)								
	<table border="1"> <tr> <td>Skin Protection</td> <td>Choose body protection according to the amount and concentration of the dangerous substance at the workplace.</td> </tr> <tr> <td>Hand Protection</td> <td>The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.</td> </tr> <tr> <td>Eye/Face Protection:</td> <td>Use safety goggles with side protection. For Face and eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU) to be used.</td> </tr> <tr> <td>Respiratory Protection</td> <td>Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection,</td> </tr> </table>	Skin Protection	Choose body protection according to the amount and concentration of the dangerous substance at the workplace.	Hand Protection	The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.	Eye/Face Protection:	Use safety goggles with side protection. For Face and eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU) to be used.	Respiratory Protection	Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection,
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		use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
	Hygiene measures	Avoid contact with skin, eyes, and clothing. Wash hands before breaks and immediately after handling the product. Immediately change contaminated clothing. Apply skin-protective barrier cream. Use adequate ventilation to keep airborne concentrations low.

Section 9 : Physical and Chemical Properties		
9.1 Information on basic physical and chemical properties		
a)	Appearance	Colorless to pale yellow liquid
b)	Colour	Colorless to pale yellow
c)	Odour	Fruity, pungent, ester, characteristic
d)	pH	3.74 (calculated)-4.14, (iso-octyl nitrate)
e)	Boiling Point/range	>100 Deg. C
f)	Melting point	-76 to -77 Deg. C
g)	Flash Point	>70 Deg. C (Close cup)
h)	Thermal decomposition	>130 Deg. C (Decompose)
i)	Lower explosion limit	0.25% v/v in air (Literature value-source unknown)
j)	Upper explosion limit	6.0%
k)	Vapour pressure	27 Pa @ 20 Deg. C
l)	Relative vapour density	No data available.
m)	Density	0.96 g/ml @20 Deg. C
n)	Water solubility	12.6 mg/L @20 Deg. C
9.2 Other safety information		
a)	Noncorrosive to steel and aluminum.	

Section 10 : Stability and reactivity	
10.1 Reactivity	Thermal decomposition at 130 °C (refer to section 9)
10.2 Chemical Stability:	The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
10.3 Possibility of hazardous reactions	Temperatures above 100°C may cause self-accelerating exothermic decomposition which causes a rapid rise in temperature and pressure. JD90119 burning of the product, exhaust toxic
10.4 Conditions to Avoid:	High temperatures, heat sources, oxidizing agents, acids and alkalis.
10.5 Incompatible Materials	oxidizing agents, acids and alkalis
10.6 Hazardous Decomposition Products:	Hazardous decomposition products formed under fire conditions. – Carbon and, nitrogen oxides.

Section 11 : Toxicological Information:	
11.1 Information on toxicological effects	
a) Acute toxicity	
	Oral LD50 Oral Rat >10000 mg/kg
	Inhalation: LD50
	Dermal: LD50 Dermal Rabbit >5000 mg/kg
b) Skin corrosion/irritation	If absorbed through skin. May causes skin irritation
c) Serious eye damage/eye irritation	May causes irritation
d) Respiratory or skin sensitization	If inhaled, may cause respiratory tract irritation.
e) Germ cell mutagenicity	Non genotoxic according to OECD Guideline 476 and OECD Guideline 473



f)	Carcinogenicity
	None of the components present in this material at concentration equal to greater than 0.1% are listed by ACGIH, IARC, NIOSH, NTP or OSHA
g)	Reproductive toxicity
	No data available
h)	Specific target organ toxicity (STOT) - single exposure
	No data available
i)	Specific target organ toxicity (STOT) - repeated exposure
	With prolonged exposure, can cause headaches, nausea, lower blood pressure
j)	Aspiration hazard
	No data available
11.2	Additional Information
	RTECS: QU7925000

Section 12 : Ecological Information	
12.1	Toxicity
	<ul style="list-style-type: none"> Acute toxicity to fish: LC₅₀ (Danio rerio, 96 hours) : >1.88 mg/L WGK Germany : 2
12.2	Persistence and Degradability
	The methods for determining the biological degradability are not applicable to inorganic substances. Partition coefficient: n-octanol/water: Log Pow: -3.7 Method: OECD Test guideline 107 No bioaccumulation is to be expected (log Pow <1).
12.3	Bio accumulative potential
	No data available
12.4	Mobility in soil
	No data available
12.5	Other adverse effects
	No data available
12.5	Results of PBT and vPvB assessment
	No data available
12.6	Other adverse effects
	Very toxic to aquatic organisms.

Section 13 : Disposal considerations	
13.1	Disposal Methods
a)	Product
	Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.
b)	Contaminated packaging
	Dispose of as unused product.

Section 14 : Transport information			
14.1	UN number		
	ADR/RID: 3082	IMDG: 3082	IATA: 3082
14.2	Proper Shipping Name		
	ADR/RID: Hazardous substance, liquid, n.o.s.(2-Ethyl Hexyl Nitrate)	IMDG: Hazardous substance, liquid, n.o.s.(2-Ethyl Hexyl Nitrate)	IATA: Hazardous substance, liquid, n.o.s.(2-Ethyl Hexyl Nitrate)
14.3	Transport hazard class(es)		
	ADR/RID: 9	IMDG: 9	IATA: 9
14.4	Packaging group		
	ADR/RID: III	IMDG: III	IATA: III
14.5	Environmental hazards		
	ADR/RID: YES	IMDG: YES	IATA: YES

14.6	Special precautions for user	
	Provisions for dangerous goods (ADR) should be complied within the premises.	
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and IBC Code	
	No data available	
Section 15 : Regulatory information		
15.1	Safety, health and environmental regulations specific for the product in question	
	Listing of substance for applicability of various regulations / National inventories: Safety phrase(s) S15 Keep away from heat. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S27 Take off immediately all contaminated clothing. S36 Wear suitable protective clothing S37 Wear suitable gloves. S39 Wear eye/face protection.	
	Regulations / National inventories	Status
	TSCA 8 (a) IUR Exempt/ Partial exemption	Not determined
	EINECS European Inventory of Existing Commercial Chemical Substances	Listed.
	Canadian list :	
	Canadian NPRI	Not listed
	CEPA Toxic substances	Not listed
	Canada inventory	Listed
	PICCS Philippines Inventory of Chemicals and Chemical Substances	Listed
	IECSC Inventory of Existing Chemical Substances Produced or Imported in China	Listed
	KECI Korean Existing Chemicals Inventory	Listed
	NAIoC New Zealand Inventory of Chemicals	Listed
	TNCI Taiwan National Chemical Inventory	Listed
	AICS Australian Inventory of Chemical Substances	Listed
	Japanese ENCS (Existing and New Chemical Substances) Inventory	Listed
15.2	Chemical safety assessment	
	<i>Product a chemical safety assessment was not carried out for this product.</i>	

Section 16 : Other information		
16.1	Abbreviations and acronyms	
	<ul style="list-style-type: none"> • <i>ADN : European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways</i> • <i>ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road</i> • <i>CAS: Chemical Abstracts Service</i> • <i>CLP : Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</i> • <i>CMR : Carcinogenic, Mutagenic or toxic for Reproduction</i> • <i>DGR : Dangerous Goods Regulations (see IATA/DGR)</i> • <i>DNEL : Derived No Effect Level</i> • <i>EC50: Effective Concentration 50%</i> • <i>EINECS : European Inventory of Existing Commercial Chemical Substances</i> • <i>ELINCS : European List of Notified Chemical Substances</i> • <i>GHS : Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations</i> • <i>IATA : International Air Transport Association</i> • <i>IATA/DGR : Dangerous Goods Regulations (DGR) for the air transport (IATA)</i> • <i>IMDG : International Maritime Dangerous Goods Code</i> • <i>Index number : Identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008</i> • <i>LC50: Lethal Concentration 50%</i> • <i>LD50: Lethal Dose 50%</i> • <i>MARPOL : Marine Pollutant as per International Convention for the Prevention of Pollution from Ships</i> • <i>REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals</i> • <i>RID: Regulation concerning the International Carriage of Dangerous Goods by Rail</i> <ul style="list-style-type: none"> • <i>vPvB : very Persistent and very Bio accumulative</i> 	



16.2	Key literature references and sources for data
	<i>a) Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU b) Regulation (EC) No. 1272/2008 (CLP, EU GHS) c) Dangerous Goods Regulations (DGR) for the air transport (IATA) d) International Maritime Dangerous Goods Code (IMDG)</i>
	<i>Prepared by :</i> Deepak Nitrite Ltd. <i>Email :</i> sbraval@godeepak.com
	<i>Revision Date</i> 01-June-2020
	<i>Revision Summary</i> <i>This safety datasheet has been prepared according to the UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS), and complies with the requirements of Regulation (EC) No. 1907/2006.</i>
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End of SDS