



Sales and Marketing of Natural Bioactive Formulations

NATROPEL™ IR INSECT REPELLENT

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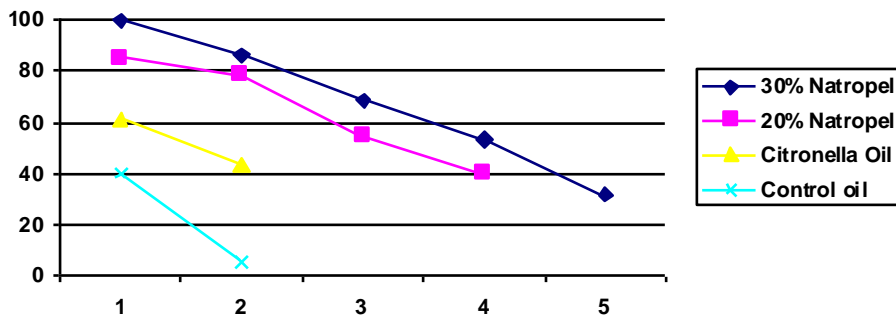
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NATROPEL™ IR INSECT REPELLENT

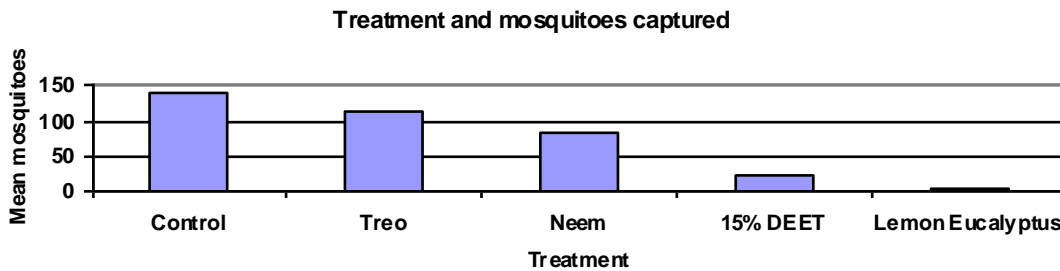
PRODUCT DESCRIPTION AND SPECIFICATION

Description: NATROPEL™ IR is a natural insect repellent based on Eucalyptus oils developed to be a highly effective repellent by increasing the levels of known active within natural oils.

20% NATROPEL™ IR gave a repellency* of between 3 and 4 hours versus *Anopheles Gambiae*. This mosquito is one of the largest and more difficult to repel. It is also the major vector for the transmission of malaria.



In a field trial of natural products in Bolivia, Citrepel (Lemon Eucalyptus) gave superior repellency to DEET against *Anopheles Darlingi*, less than 5 landings compared with 22 landings. These results are based on a two hour exposure period after treatment had been applied for 2 hours.



Unlike most other natural materials, a significant increase in activity is achieved by using a higher amount. NATROPEL™ IR is effective against midges, sand fly, stable fly and ticks as well as mosquitoes.

NATROPEL™ IR does not show the same plasticizing properties as other repellents actives such as DEET.

Para-menthane diol (PMD), the active in NATROPEL™ IR does occur in nature. Our process increases the level of PMD to give a product which gives a 'good to very good degree of protection'.

* in the tests performed, the product was said to be effective when it affords protection greater than or equal to 50%

Specifications:	Appearance:	Clear yellow liquid
	Assay as PMD	40.00% minimum
	Acid value, mg KOH/g	2.00 maximum
	Water content (Karl Fischer %)	2.00 maximum
	pH (5% aqueous solution)	5 – 8
	Refractive Index	1.459 – 1.466
	Relative Density g/cm ³	0.950 – 0.970

Functionality: Insect Repellent. Para-menthane diol ((PMD) the active) is effective in the vapour phase, but has a very low partial pressure. Therefore best results tend to be seen from products where the PMD is applied directly to the skin of the subject – human or animal. PMD is (unlike some others) very poorly absorbed through the skin hence it remains on the surface doing what it is supposed to do – evaporate to REPEL insects.

Potential benefits: Natural Product - very effective against a range of flying/biting insects (mosquito, ticks, midges, horseflies, flies and fleas. **NATROPEL™ IR** has also shown to be effective against mites.

Low dermal absorption – hence minimal toxicological issues

Highly Effective

Pleasant smell

Supported under BPD

Usage levels: The exact dosage cannot be stated in general since it depends on the application in question.

Directions for use: **NATROPEL™ IR** can be applied by spraying or dipping.

Storage: Store in a cool well ventilated area. Keep away from sources of ignition. Avoid excessive heat. Store in well-filled tightly closed containers.

Shelf life: The shelf life of **NATROPEL™ IR** is twelve (12) months when stored according to recommendation.

Packaging: **NATROPEL™ IR** is available in 25kg or 170kg net drum. Other sizes of packaging are available on request.

Safety and Handling: A Materials Health and Safety Data Sheet is available on pages 4 - 7

MATERIALS SAFETY DATA SHEET

NATROPEL™ IR

I. PRODUCT DESCRIPTION AND SPECIFICATION

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II. SAFETY INFORMATION

1. IDENTIFICATION

Name: NATROPEL™ IR
Product Code: NPNIR025 (25kg drum) NPNIR170 (170kg drum)
CAS Number: 42822 – 86 – 6
Use of substance: Insect repellent active
Supplied by: Natural Preserves Limited
Unit 10, Business Centre
Eanam Wharf
Blackburn
Lancashire BB1 5BL
Telephone: +44 (0)1254 678703 Fax: +44 (0)1254 662 590
E-mail: info@naturalpreserves.co.uk

2. COMPOSITION

Hazardous Ingredients: LEMONGRASS OIL COCHIN <1%
EINECS: 259-161-9 CAS:8007-02-1
[Sens.] R43; [Xn] R65
CITRAL 1-10%
EINECS: 226-394-6 CAS: 5392-40-5
[Xi] R38; [Sens.] R43
Contains: p-menthane 3,8-diol [CAS No42822-86-6]

3. HAZARD IDENTIFICATION

Main Hazard: May cause sensitisation by skin contact.

4. FIRST AID MEASURES

- Eye Contact:** Bathe the eye/s with running water for 15 minutes. Lift upper and lower eye lids and flush with water. Seek medical attention if irritation or other symptoms occur.
- Skin:** Remove all contaminated clothes and footwear immediately unless stuck to skin. Wash immediately with plenty of soap and water. Seek medical attention if irritation develops or persists.
- Inhalation:** If discomfort is felt, remove from exposure into fresh air, keep warm and rest. If rapid recovery does not occur, seek medical attention.
- Ingestion:** Do not induce vomiting. Dilute internally with water. Seek medical attention.

5. FIRE FIGHTING MEASURES

- Extinguishing media:** Alcohol or polymer foam. Carbon dioxide. Dry chemical powder. Do not use water.
- Exposure hazard:** In combustion emits toxic fumes of carbon dioxide/ carbon monoxide.
- Protection of Fire-fighters:** Avoid breathing fire vapours.

6. ACCIDENTAL RELEASE MEASURE

- Personal Precautions:** Eliminate all sources of ignition. Refer to section 8 of SDS for personal protection details.
- Environmental Precautions:** Avoid contamination with surface and ground water and soil. The relevant authority should be informed of any large spillage to watercourse or drain.
- Clean-up Precautions:** Take up with absorbent material (e.g. sand, kieselguhr, universal binder). Ensure adequate ventilation.

7. HANDLING AND STORAGE

- Handling requirements:** Ensure there is sufficient ventilation of the area. Eliminate all sources of ignition.
- Storage conditions:** Store in cool, well ventilated area. Keep away from sources of ignition. Avoid excessive heat. Store in well-filled tightly closed containers.

8. EXPOSURE, CONTROL AND PERSONAL PROTECTION

- Engineering measures:** Ensure there is sufficient ventilation of the area.
- Respiratory Protection:** Avoid inhalation of concentrated vapours. In case of insufficient ventilation, wear suitable respiratory equipment.
- Eye Protection:** Safety Glasses or goggles.
- Skin Protection:** Gloves should be worn as appropriate.

9. PHYSICAL AND CHEMICAL PROPERTIES

State:	Liquid
Colour:	Colourless to yellow
Smell:	Fresh, Citrus, Geranium.
Solubility in water:	Slightly soluble.
Also soluble in:	Most organic solvents.
Flash point °C:	>61

10. STABILITY AND REACTIVITY

Stability:	Stable under normal circumstances
Conditions to avoid:	Heat. Sources of ignition. Flames
Materials to avoid:	Strong oxidising agents. Strong acids. Strong bases.
Haz. Decomp. Products:	In combustion emits toxic fumes of carbon dioxide/carbon monoxide

11. TOXICOLOGICAL INFORMATION

Hazardous ingredients:	LEMONGRASS OIL COCHIN ORL RAT LD50>5000 mg/kg SKN RBT LD50>2000 mg/kg CITRAL IPR RAT LD50 460 mg/kg ORL MUS LD50 6 gm/kg ORL RAT LD50 4960mg/kg
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12. DISPOSAL CONSIDERATION

Disposal operations:	Avoid disposing into drainage system or the environment.
NB:	The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

13. TRANSPORT INFORMATION

ADR/RID
IMDG/IMO
IATA/ICAO

14. REGULATORY INFORMATION

Hazard	Symbols:		Irritant
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Risk phases: R43: May cause sensitisation by skin contact.

Safety phases: S24: Avoid contact with skin
S37: Wear suitable gloves

Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

15. INFORMATION ON USE

Risk phases used in s.3: R43: May cause sensitisation by skin contact.
R65: Harmful: may cause lung damage if swallowed.
R38: Irritating to skin.

Legal Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above.

Country of Origin: United Kingdom

Natural Preserves has used every possible care in compiling, preparing and issuing this information. Manufacturers using this product must nevertheless satisfy themselves of the suitability of the material for incorporation in their own end-products having regard to all relevant obligations therewith, whether under the Food Safety Act, Feeding Stuffs Regulations, Health & Safety at Work Act, Control of Substances Hazardous to Health Regulations or any other relevant legislation or common law requirement.

The information contained in this publication is based on our own research and development work and is to the best of our knowledge reliable. Users should, however, conduct their own tests to determine the suitability of our product for their own specific purposes. Statements contained herein should not be considered as a warranty of any kind, expressed or implied and no liability is accepted for the infringement of any patent



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