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Title: Neem oil microemulsion without cosurfactants or alcohols and a process to form the same. (Patents)

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The Indian **Neem** Tree (*Azadirachta indica* A. Juss) has been recognised as a promising source of a plurality of biologically active chemicals. **Neem** oil is obtained mainly from its seeds and may be obtained by press or solvent extraction from **neem** seeds/kernels. **Neem** oil consists primarily of fatty acids and bioactive meliacins.

Neem oil is reported to be effective in the treatment of cuts, bruises, skin disorders and acne and to remove skin blemishes. It also has a large number of medical applications and is reportedly effective for treating psoriasis. It has been shown to be antimalarial, antitubercular, antiviral, antiallergic, antiperiodontic antiseptic, antimicrobial and anti hyperglycemic. **Neem** oil has been shown to be an effective analgesic, especially for earache and headache. **Neem** leaf is regarded as a traditional herb for treating diabetes and is also an effective insecticide.

The applicant claims that current methods for delivering the benefits of **neem** oil to consumers are unsatisfactory and compositions containing it are frequently unstable. They claim product benefits by providing **neem** oil as a thermally stable microemulsion, which is co-solvent and alcohol-free.

The microemulsion requires the inclusion of a surfactant selected from the group of alkyl phenol ethoxylates, where the alkyl group contains 8-12 carbons and the ethoxylate contains an average of 4-12 ethoxylate groups. The surfactant can be a nonyl phenol ethoxylate and the surfactant comprises 0.003 to 25% by weight of the composition. The surfactant to oil ratio is preferably at least 3: 1. To prepare a 10% neem oil microemulsion concentrate, 10g of the oil, 40g of the surfactant and water are blended together to form a nearly clear mass. When diluted in water a stable, clear and transparent microemulsion of the desired strength is obtained.

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