Curoxyl™ 42

Easy to formulate benzoyl peroxide technology

Curoxyl™ 42

INCI : Water (and) Benzoyl Peroxide
CAS #: 7732-18-5, 94-36-0
EC #: 231-791-2, 202-327-6

Only USP concentration gel form available

Safety: Very low irritation potential

Small particle size penetrates the pore efficiently

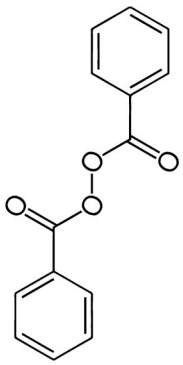
Non-hazardous shipping status makes it operationally friendly

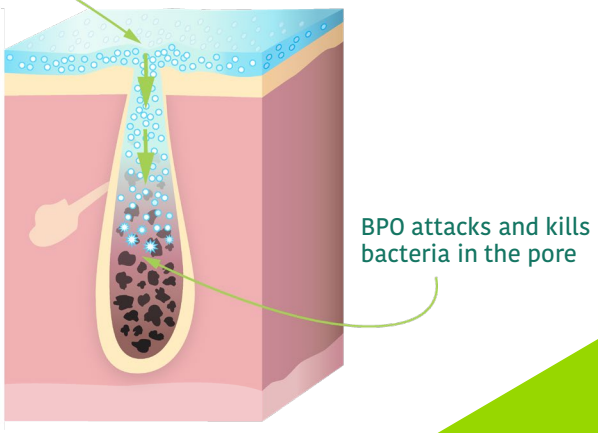
Patented Benzoyl Peroxide Gel form for improved efficacy and easier processing.

Curoxyl™ 42 is a patented, aqueous based, micronized Benzoyl Peroxide dispersion in the form of a gel. Curoxyl™ 42 is an effective replacement for traditional forms of BPO and is clinically proven to reduce acne lesions and dark spots.

Benzoyl Peroxide (BPO) is a tried and true acne monographed approved technology. Acne is caused in part by the C.acnes bacteria, which cannot live in the oxygen-rich environment provided by the use of Benzoyl Peroxide. However powder BPO is a challenging ingredient for manufacturers and requires high amount of investment to be handled safely. Moreover, BPO demonstrate higher efficacy when its particle size allows for optimized bioavailability.

Benzoyl Peroxide





Recommended applications


Facial Cleansers


Skin Care

PATENT

US 8,697,130 B1
Aquenous solid diacyl peroxide suspension

C
China IECIC 2015

USP Compliant

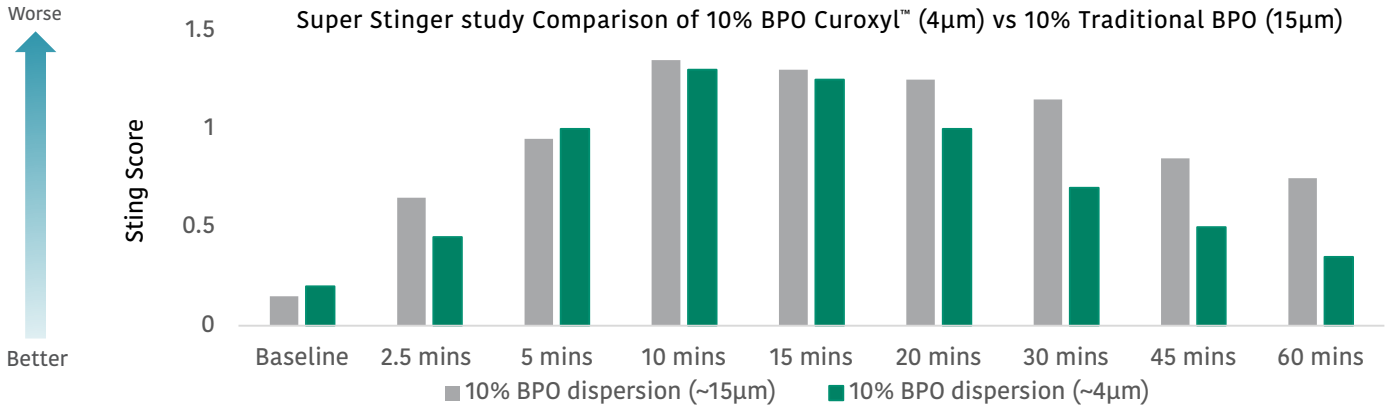
Vantage

What is Curoxyl™ 42?

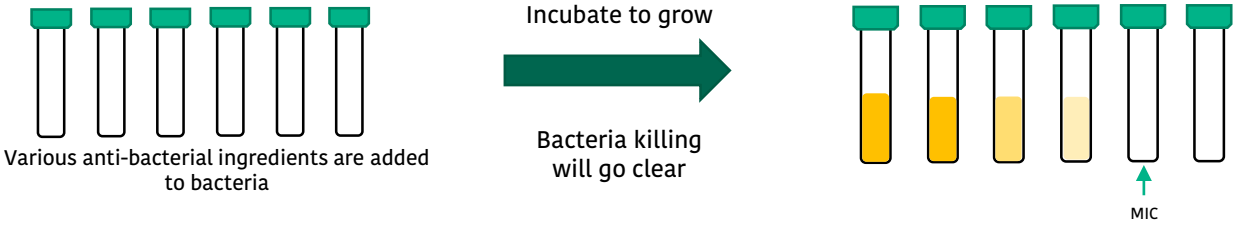
Curoxyl™ 42 is a patented, aqueous based, micronized benzoyl peroxide dispersion (40%) in the form of a gel that can replace traditional BPO due to its low irritation profile. Curoxyl™ 42 can be the starting point for topically applied anti-acne creams, anti-acne wipes, facial cleansers and body washes. Curoxyl™ 42 can also be used in medicated pet shampoo formulations.

Safety Profile

Curoxyl™ 42 is less irritating than traditional BPO.



Anti-bacterial efficacy



Sample ID	Replicate	25%	12.5%	3.13%	1.56%	0.78%	0.39%	0.20%	0.10%	0.05%	0.02%	0.01%
Curoxyl™ 42	*C. acnes*	0	0	0	0	0	0	0	0	0	+	+
Negative Control	No Bacteria	0	0	0	0	0	0	0	0	0	0	0

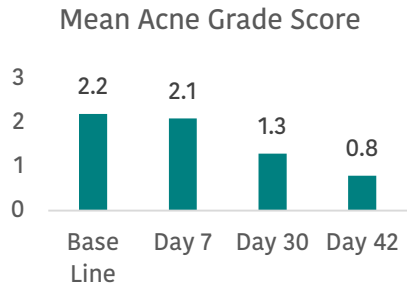
Legend: + = Indicated bacterial growth 0 = No bacterial growth

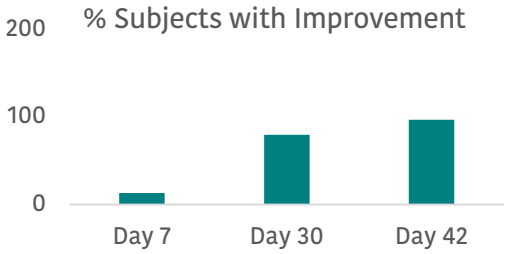
Method

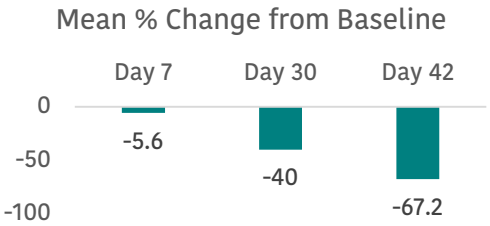
A study using a 3rd party laboratory demonstrated that a minimum inhibitory concentration (MIC) endpoint of 0.05% was determined for Curoxyl™ 42 against Cutibacterium acnes.

Dermatologist assessment of Acne treatment

Curoxyl™ 42 quickly acts against visible acne signs.







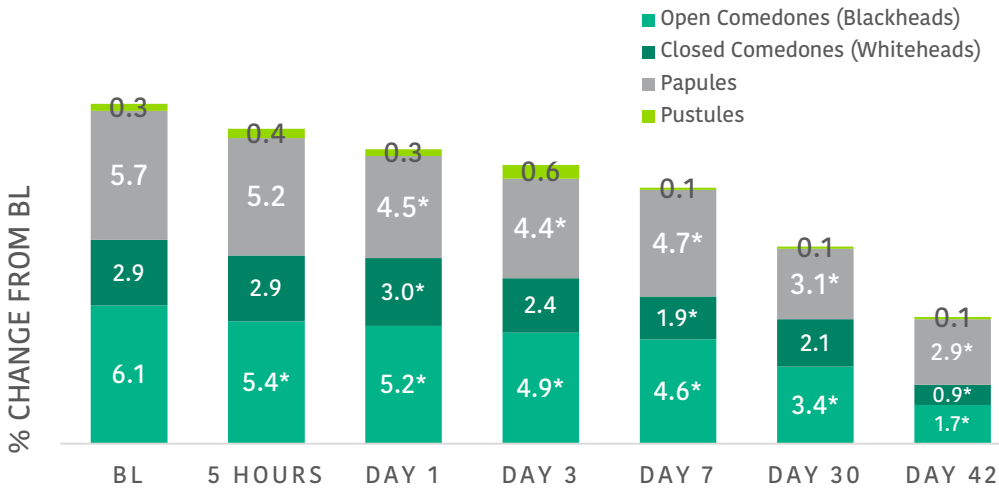
Method

30 volunteers that are 12-35 years old, average acne grade of 2 on Modified Cook's Scale
Test Product
Curoxyl™ 42 – 10% BPO
Application
Applied twice daily for 6 weeks

Visual assessment by certified dermatologist
Janus™ Digital Imaging System Analysis
Criteria assessed:

- Board certified Dermatologist grading and lesion counting

10% BPO Curoxyl™ 42 Formulation Significantly Reduces a Variety of Acne Lesion Counts (Mean Acne lesion count)



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Assay	90-125% of label claim (Claim 40.0%)
Appearance	White Gel
pH	4.8 – 6.6
Related Compounds	Matches Standard

This material meets the test requirements in the current US Pharmacopeia National Formulary for Benzoyl Peroxide Gel.

Formulation guidelines

Incorporation of Curoxyl™ 42 in formulations:

- Oil-in-water emulsions: After the two phases have been combined and the emulsion has formed, cool the batch to 40°C - 45°C. Slowly mix in Curoxyl™ 42 with propeller agitation and continue cooling and mixing.
- Gel based formulations: After polymer dispersion at 75°C-85°C, add desired ingredients, then add neutralizer if required: KOH or NaOH. When batch reaches 45°C, add Curoxyl™ 42 with mixing and cool to 25°C.
- Note: Benzoyl peroxide is a white powder that is insoluble in water, therefore only opaque water based gel formulations are possible.
- Cold process: Is easily used in cold processing of formulations where no heat is needed.
- Note: When using cold process, a temperature of 25°C is recommended.

Compatibility

- With most esters, waxes and nonionic emulsifiers.
- With glycols, glycerin and PEGs.
- With selected thickening additives including certain synthetic polymers (ex. carbomer, magnesium aluminum silicate, bentonite, PEG-14M, PEG/PPG-4/12 dimethicone, methyl methacrylate/glycol dimethacrylate crosspolymer, lauryl methacrylate/glycol dimethacrylate crosspolymer, hydroxypropyl methylcellulose, acrylates C10-30 alkyl acrylate crosspolymer, cetyl alcohol, cetearyl alcohol).
- Fragrances – should be designed to be compatible with benzoyl peroxide from the fragrance supplier.
- Note: Benzoyl peroxide is an oxidizing agent, therefore use with ingredients that are subject to oxidation, such as natural vegetable oils, some natural gums, active ingredients, extracts and certain cream gel forming polymers, is not recommended.