

# Perkadox API granular

Dibenzoyl peroxide

Perkadox® API Granular is a free flowing dibenzoyl peroxide granules for use in various pharmaceutical applications including anti-acne creams, washes and shampoos. Registered with the FDA under a drug master file (US-DMF) which can be referenced in new or generic drug applications. Used in fine chemicals synthesis.

CAS number  
94-36-0

EINECS/ELINCS No.  
202-327-6

TSCA status  
listed on inventory

Molecular weight  
242.2

Active oxygen content  
peroxide  
6.61%

Concentration  
4.82-5.09%

## Specifications

Assay

72.0-77.0 %

## Applications

Perkadox® API Granular is a free-flowing granule form of dibenzoyl peroxide suitable for use in various pharmaceutical applications including anti-acne creams, face and body washes, and shampoos. Perkadox® API Granular is manufactured in accordance with U. S. current Good Manufacturing Practices and relative regulations as they apply to Bulk Pharmaceutical Chemicals.

## Half-life data

The reactivity of an organic peroxide is usually given by its half-life ( $t_{1/2}$ ) at various temperatures. For Perkadox® API Granular in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

|           |                             |
|-----------|-----------------------------|
| 0.1 hr    | at 113°C (235°F)            |
| 1 hr      | at 91°C (196°F)             |
| 10 hr     | at 71°C (160°F)             |
| Formula 1 | $k_d = A \cdot e^{-E_a/RT}$ |
| Formula 2 | $t^{1/2} = (\ln 2)/k_d$     |
| Ea        | 122.35 kJ/mole              |
| A         | 6.94E+13 s <sup>-1</sup>    |
| R         | 8.3142 J/mole·K             |
| T         | (273.15+°C) K               |

## Thermal stability

Organic peroxides are thermally unstable substances, which may undergo self-accelerating decomposition. The lowest temperature at which self-accelerating decomposition of a substance in the original packaging may occur is the Self-Accelerating Decomposition Temperature (SADT). The SADT is determined on the basis of the Heat Accumulation Storage Test.

|        |  |
|--------|--|
| SADT   | 80°C (176°F)   |
| Method | The Heat Accumulation Storage Test is a recognized test method for the determination of the SADT of organic peroxides (see Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria - United Nations, New York and Geneva). |

## Storage

Due to the relatively unstable nature of organic peroxides a loss of quality can be detected over a period of time. To minimize the loss of quality, Nouryon recommends a maximum storage temperature

|         |  |
|---------|--|
| Ts max. | 40°C (104°F)   |
| Note    | When stored under these recommended storage conditions, Perkadox® API will remain within the Nouryon specifications for a period of at least 12 months after production. |

## Packaging and transport

Perkadox® API Granular is packaged on an active weight basis. Gross package weights are adjusted per the actual batch's assay to insure each package contains the correct amount of active hydrous benzoyl peroxide. The 25 lb. active weight box typically has a gross weight of 33-34 lbs. Perkadox® API Granular is packaged in a single 25 lb. (active) HDPE bag in a protective box. Both packaging and transport meet the international regulations. For the availability of other packed quantities contact your Nouryon representative. Perkadox® API Granular is classified as Organic peroxide type C; solid, Division 5. 2; UN 3104.

## Safety and handling

Keep containers tightly closed. Store and handle Perkadox® API Granular in a dry well-ventilated place away from sources of heat or ignition and direct sunlight. Never weigh out in the storage room. Avoid contact with reducing agents (e. g. amines), acids, alkalis and heavy metal compounds (e. g. accelerators, driers and metal soaps). Please refer to the Safety Data Sheet (SDS) for further information on the safe storage, use and handling of Perkadox® API Granular. This information should be thoroughly reviewed prior to acceptance of this product. The SDS is available at [nouryon.com/sds-search](http://nouryon.com/sds-search).

## Major decomposition products

Carbon dioxide, Benzene, Benzoic acid

All information concerning this product and/or suggestions for handling and use contained herein are offered in good faith and are believed to be reliable. Nouryon, however, makes no warranty as to accuracy and/or sufficiency of such information and/or suggestions, as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. Nouryon does not accept any liability whatsoever arising out of the use of or reliance on this information, or out of the use or the performance of the product. Nothing contained herein shall be construed as granting or extending any license under any patent. Customer must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes. The information contained herein supersedes all previously issued information on the subject matter covered. The customer may forward, distribute, and/or photocopy this document only if unaltered and complete, including all of its headers and footers, and should refrain from any unauthorized use. Don't copy this document to a website.

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