

IXPER® 70C Calcium Peroxide Granules

Introduction

Calcium Peroxide products are typically very fine powders. This allows their use in a variety of applications, including in toothpaste, for dough conditioning, and to make a slurry for injection into soil for groundwater bioremediation.

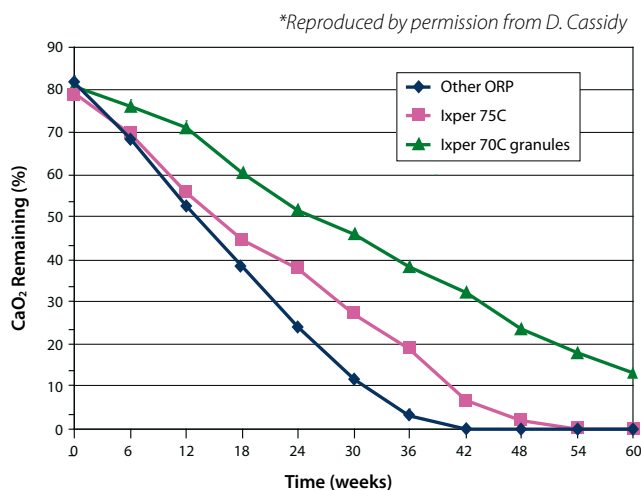
In other applications, however, the dust created by these fine powders causes some handling challenges. Therefore, a granular calcium peroxide product is highly desirable.

Properties

IXPER® 70C Calcium Peroxide Granules is a unique material offered by Solvay Chemicals International. It is specifically designed to avoid the dust generated by handling other calcium peroxide products.

Its chemistry is similar to IXPER® 75C Calcium Peroxide powder (see IXPER® 75C Calcium Peroxide application data-sheet for details), but the formulation provides even lower solubility in water. This leads to a further reduction in the release rate of the active ingredients, and an extension of effectiveness over time, as observed in the following graph*.

This was demonstrated in a laboratory study conducted at Western Michigan University which compared the oxygen release profile of IXPER 70C Calcium Peroxide Granules with the powder IXPER® 75C Calcium Peroxide and another Oxygen Release Product (ORP). This graph was developed using a 1% suspension of calcium peroxide product in water. The flasks were covered with bubble valves for off-gas release without allowing atmospheric air to enter. It is clear that IXPER® 70C Calcium Peroxide Granules outperforms both powdered CaO_2 products.



Soil & Groundwater Bioremediation Applications

IXPER® products can be used to cost-effectively accelerate the natural attenuation of contaminated soils. The capability of aerobic microbes to biologically degrade contaminants, such as petroleum hydrocarbons, can be limited due to lack of oxygen. IXPER® products offer a passive approach to aerobic bioremediation of target contaminants, ensuring that adequate oxygen is present over an extended period of time. Without this supplemental oxygen source, the degradation of contaminants may either stop or proceed by much slower anaerobic processes.

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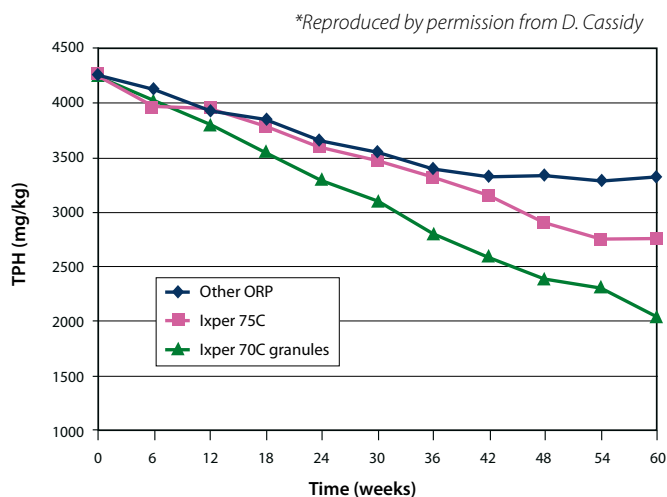


Soil & Groundwater Bioremediation Applications (continuation)

IXPER® 70C Calcium Peroxide Granules are particularly suitable during the excavation of contaminated soil, where it is used to line pits before clean soil is introduced. It is also the product of choice in cases of ex-situ soil remediation, or for in-situ treatment of shallow contaminated soils.

A laboratory test was done comparing the performance of several calcium peroxide products for the degradation of diesel fuel in a silty clay loam. The soil contained 3.6% carbonates and had a pH of 7.9. Results, as observed in the following graph*, show that IXPER® 70C Calcium Peroxide Granules outperformed both powder calcium peroxide products on reduction of Total Petroleum hydrocarbons (TPH). These results were significantly different after 30 weeks.

For further information about IXPER® 70C Calcium Peroxide Granules, please contact Solvay Chemicals International or visit our websites.



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