

Product Sheet

DESI PAK® BENTONITE DESICCANTS

CLARIANT

EFFICIENT & COST
EFFECTIVE
SOLUTION



PURPOSE

Desi Pak® bentonite desiccants are an efficient and cost effective solution for packaging applications in need of protection from the damaging effects of moisture.

WHAT ARE THEY?

BENTONITE

Bentonite is a clay material that is quite abundant on earth. It was, and is, still formed in nature by weathering of volcanic ashes and subsequent sedimentation. Bentonite properties are determined mainly by the amount and type of smectite-type layer silicates, for example montmorillonite. These minerals consist of stacks of platelet-like crystals that can fully disintegrate in water and form viscous slurries. They also exhibit a high specific surface area and cation exchange capacity, and can thus adsorb and bind quite a variety of molecules. All these properties, and many more, vary from one bentonite deposit to the other, and they can all be influenced by an appropriate treatment of the clay by various processes. Careful selection of the right bentonite and the right processing make it fit for a plethora of applications

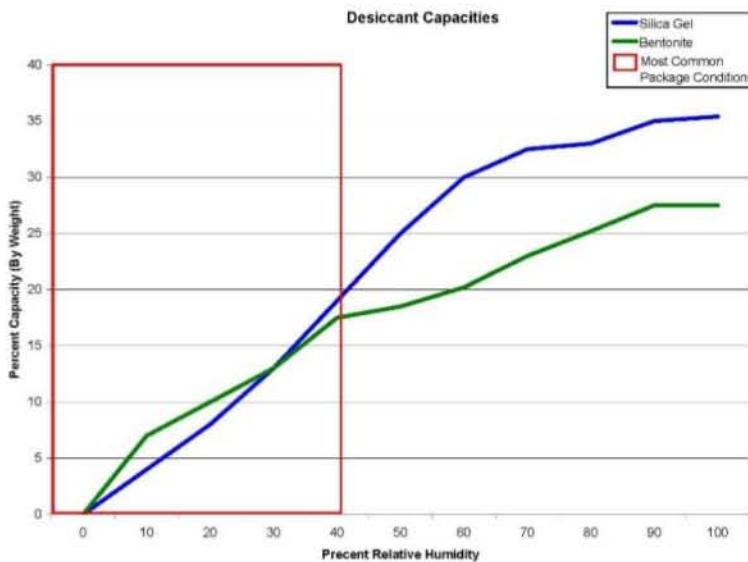
Clariant's Desi-Pak® bentonite desiccants are a selection of natural calcium-rich montmorillonite clays, which require no additional additives for activation other than drying. Once dried, the bentonite's layered structure is available to attract and bind water molecules to its vast inner and outer surface area, commonly referred to as moisture adsorption. Even at full water vapor capacity, the bentonite remains dry and free-flowing with no apparent change in size, shape or texture.

COPYRIGHT ©
CLARIANT INTERNATIONAL LTD 2016

ISSUE
January 2016

DESICCANT CAPACITIES: BENTONITE & SILICA GEL:

The Bentonite's adsorption capacity and rate are ideal for most packaging applications. The adsorption capacity of the Bentonite is considerable and even higher than silica gel at low humidity levels and increases as relative humidity rises. In fact, Bentonite has a higher capacity for moisture adsorption than silica gel in conditions having less than 30 percent relative humidity, which is the case for most packaging environments.



BENEFITS OF DESI PAK® BENTONITE DESICCANTS

- Bentonite desiccants effectively adsorb moisture in product packaging to combat and help prevent moisture's damaging effects such as corrosion, mold and degradation.
- Clariant has a global network of mines, secure supply, efficient logistics, and unparalleled packaging application services worldwide.
- Production of bentonite desiccants have less impact on the environment: no harsh chemicals used in production, and the re-cultivation and re-naturalizing of mined sites.
- Used for a variety of industries such as semiconductor, electronic, logistics, industrial, food, pharmaceutical, military, machinery, and automobile.
- Clariant offers bentonite desiccants that meet all relevant MIL-Spec requirements for military and defense applications; as well as comply with JEDEC for semiconductor packaging; Single bags as standard according to DIN / AFNOR /MIL; US FDA specifications for use in food and drug applications.
- Available in different configurations: bags, single packets, and continuous strips for automatic insertion.

COPYRIGHT ©
CLARIANT INTERNATIONAL LTD 2016

ISSUE
January 2016



EXPLORATION TO RE-PLACING

EXPLORATION



While bentonite, per se, is abundant on earth, careful selection of the right bentonites for the individual applications is a crucial part of ensuring uninterrupted supply. To this end our own exploration team of geologists, mineralogists and mining engineers travel the world to find suitable deposits for our customers' needs.

OPENING UP



Our application development department, staffed with chemists and scientists experienced in our customers' applications, tests and approves the individual bentonite grades prior to moving into full-scale mining operations

EXTRACTION



Clariant currently operates 40 bentonite mines, so our customers can rest assured that supply is secured and that mining is fully compliant with international, national, regional, and local regulations.

PROCESSING & PRODUCTION



- Clariant's bentonite desiccant is activated by drying the bentonite (evaporation of water molecules).
- Milling and separating into different mesh sizes
- Quality Control checks throughout the process and final stage

RE-CULTIVATION



Bentonite mines are operated under the prerequisite that the land will ultimately be returned to the land owner in the same or even better state than before extracting bentonite.

RE-PLACING



Nature gives us so much – we give back

When we re-naturalize mining sites, we replace and improve natural habitats by planting mixed woodlands and increasing biodiversity, being a good neighbor

This information corresponds to the present state of our knowledge and is intended as a general description of our products and their possible applications. Clariant makes no warranties, express or implied, as to the information's accuracy, adequacy, sufficiency or freedom from defect and assumes no liability in connection with any use of this information. Any user of this product is responsible for determining the suitability of Clariant's products for its particular application.* Nothing included in this information waives any of Clariant's General Terms and Conditions of Sale, which control unless it agrees otherwise in writing. Any existing intellectual/industrial property rights must be observed. Due to possible changes in our products and applicable national and international regulations and laws, the status of our products could change. Material Safety Data Sheets providing safety precautions, that should be observed when handling or storing Clariant products, are available upon request and are provided in compliance with applicable law. You should obtain and review the applicable Material Safety Data Sheet information before handling any of these products. For additional information, please contact Clariant.

* For sales to customers located within the United States and Canada the following applies in addition: NO EXPRESS OR IMPLIED WARRANTY IS MADE OF THE MERCHANTABILITY, SUITABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE OF ANY PRODUCT OR SERVICE.

COPYRIGHT ©
CLARIANT INTERNATIONAL LTD 2016

ISSUE
January 2016



Clariant International Ltd