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## Gradient in the adsorber When does an adsorber have to be exchanged?

As the load increases, the moisture indicator changes color. The gradient of a silica gel bed with moisture indicator is divided into three zones:

- "Unloaded" is the zone with the original color of the moisture indicator.
- "Loading" is the zone with the discolored moisture indicator.
- "Color Change Zone" is the zone with a mixed color of the original and the loaded color.

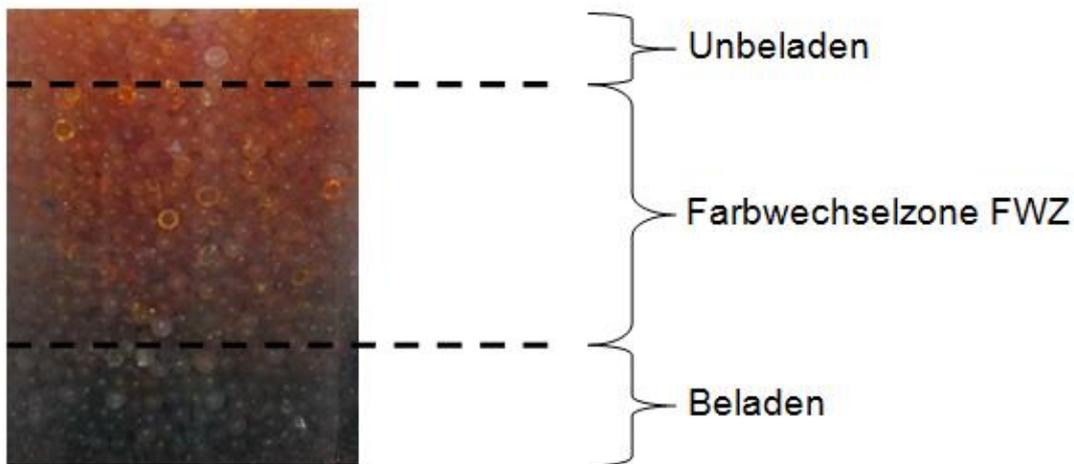


Illustration: Gradient in a bed of silica gel E Orange Green.

The color change zone FWZ is the transition zone between the "unloaded" and the "loaded" zone, see figure. The color impression arises from a mixture of unloaded and loaded indicator.

In the case of a flow-through, unloaded bed, the "unloaded" zone occupies the entire height of the bed. The color change zone arises at the entrance of the flow and migrates to the end of the bed. The "unloaded" zone is displaced by the color change zone. This represents the first color change.

The "loaded" zone is created after the FWZ at the entrance of the flow and displaces it. If this reaches the end of the bed, the second color change has occurred.

This color gradient is transferable to ventilation dryers. If the "loaded" zone takes up the entire height of the aeration dryer, it is loaded. A regeneration of the loaded silica gel makes sense. If used further, it still adsorbs water.



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A reliable statement about the drying properties is not possible after discoloration for the user. The exact time of the second color change is difficult for the user to estimate. For this reason it is recommended to perform the regeneration between the first and the second color change.

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