Borchi® Dragon High-Performance Catalyst Formulation Guide

1. Add Borchi® Dragon high-performance catalyst as the last ingredient into alkyd resin or fully formulated alkyd-based paint
    - Leave out any secondary driers or anti-skins in initial testing
2. Test a ladder study to determine optimum loading
    - Borchers recommends 0.5%, 1%, 2% up to 3% Borchi® Dragon, as supplied on resin solids.

Adding too much of Borchi® Dragon can overdose the system and cause dry retardation

3. To determine drier requirement:

(% resin solids in paint formulation) x (% dosage loading of Borchi® Dragon) x (batch size) = amount of Borchi® Dragon required in paint formulation

Example of adding 1% Borchi® Dragon into 40% resin solids paint formulation for 100g batch size 0.4 (resin solids) X 0.01 (dosage loading) X 100g (batch size) = 0.40g Borchi® Dragon

4. To determine how much Borchi® Dragon is needed for (X) gallons of paint:

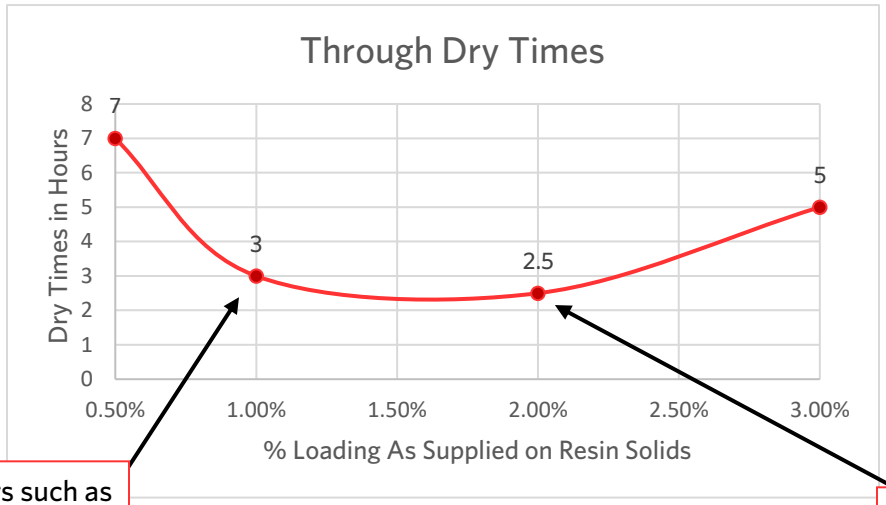
W= gallons of paint produced
Y=density of paint lbs/gallon
Z= wt/wt dosage of Borchi® Dragon

$$\frac{(W)(Y)(Z)}{(\text{gallons})\ 8.68\ \text{lbs/gal}} = \text{Volume of Borchi® Dragon needed}$$

Example of 1% Borchi® Dragon into 40% resin solids paint formulation. (0.4g into 100g batch size.) Density of the paint is 8.83lbs/gallon, and 100 gallons of paint is produced annually.

$$\frac{100\ \text{gallons (paint produced)} \times 8.83\ \text{lbs/gallon (density of paint)} \times 0.004\ \text{(wt/wt)}}{8.68\ \text{lbs/gallon}} = 0.41\ \text{gallons Borchi® Dragon}$$

5. Mix in required drier addition at medium to low shear
6. Allow the formulas to sit for 24 hours to allow the Borchi® Dragon to equilibrate
7. After 24 hours, drawdown paint formulation on Leneta or customer specific substrate and measure for dry times
    - Circular dry recorders are standard practice
8. Once optimum dosage loading is determined add in secondary driers or anti-skin as needed to achieve desired performance properties
    - Secondary driers such as Zirconium Hex-Cem® can help decrease dry times
    - Secondary driers such as Calcium Hex-Cem® can prevent loss of surface dry by preferentially being absorbed by pigments
    - Secondary driers such as AOC E (aluminum) can help decrease dry times and increase hardness



Add in secondary driers such as Zr to decrease dry times further

Optimum Loading

Additional Information:

Anti-Skinning agents can negatively impact drying performance. It is important to test Borchi® Dragon without anti-skins initially. If an anti-skinning agent is required, a separate ladder study with anti-skins must be performed. We recommend the addition of 0.2% up to 1% Borchi® Shield as supplied on total formula weight.

Borchi® Shield is a MEKO-Free anti-skinning agent synergistically designed for optimum anti-skin performance when used in combination with Borchi® Dragon high-performance catalyst.

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Milliken