Borchers GmbH

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Formulation Guideline to prevent in-can skinning in alkyd paint systems with MEKO-free Anti-Skinning Agents

The standard anti-skinning agent in today's market is still Methyl Ethyl Ketoxime (MEKO). MEKO is currently labeled as a carcinogen Class 2 (suspected of causing cancer / H 351). There is a risk that the classification will change to a carcinogen 1B (may cause cancer / H 350) which would limit the addition rate to 0.1% in a Do-it-Yourself paint formulation. Additionally, there are concerns about work place exposure and tighter limits are currently being discussed.

Due to the health hazard concerns related to MEKO, Borchers recommends chemists start working now on developing MEKO-free formulations.

This guide provides an overview on Borchers MEKO alternatives. It outlines a procedure on how to determine the suitable anti-skinning agent at the best addition rate to effectively prevent in-can skinning with no drawbacks on other paint properties.

All recommended dosages in this guide are calculated based on the total formulation.

Formulation Guideline with MEKO-free Anti-Skinning Agents

- **Starting Point:** The starting point formula should include a balanced drier package and the concentration of the primary drier (surface drier) is not higher than needed for the desired drying time. A high concentration of the primary drier will promote in-can skinning faster.
- **Procedure:** Measure dry and skin prevention times after each step
- **Determine optimum level**: Start with step 1 and proceed step by step until an acceptable balance of no skinning and required drying time is reached.
- **Not successful after step 4?** Review type and level of driers in your formula (see Borchi® OXY – Coat formulation guideline).

1) Initial Step

- Start with the concentration of anti-skinning additives outlined below

MEKO Replacement

0.5 x MEKO %
Ascinin® Anti-Skin 0444

New Development

0.2%
Ascinin® Anti-Skin 0444

2) Skinning too fast?

- Increase the addition rate of the anti-skinning agent in increments of 0.1%
- Max. concentration 0.6%

% initial step + 0.1%
Ascinin® Anti-Skin 0444

3) Surface dry too slow?

- Switch to the more volatile anti-skinning agent Ascinin® Anti-Skin 1240
- Increase the addition rate in increments of 0.2% to a max. level of 1.2%

0.6%
Ascinin® Anti-Skin 1240

4a) Other Options

- Switch to Borchi® Nox 1640
- Increase in increments of 0.5% to a max. of 2.0%

1.0%
Borchi® Nox 1640

4b) Other Options

- Try combinations of anti-skinning agents

0.5% Borchi® Nox 1640 + 0.5% Ascinin® Anti-Skin 1240

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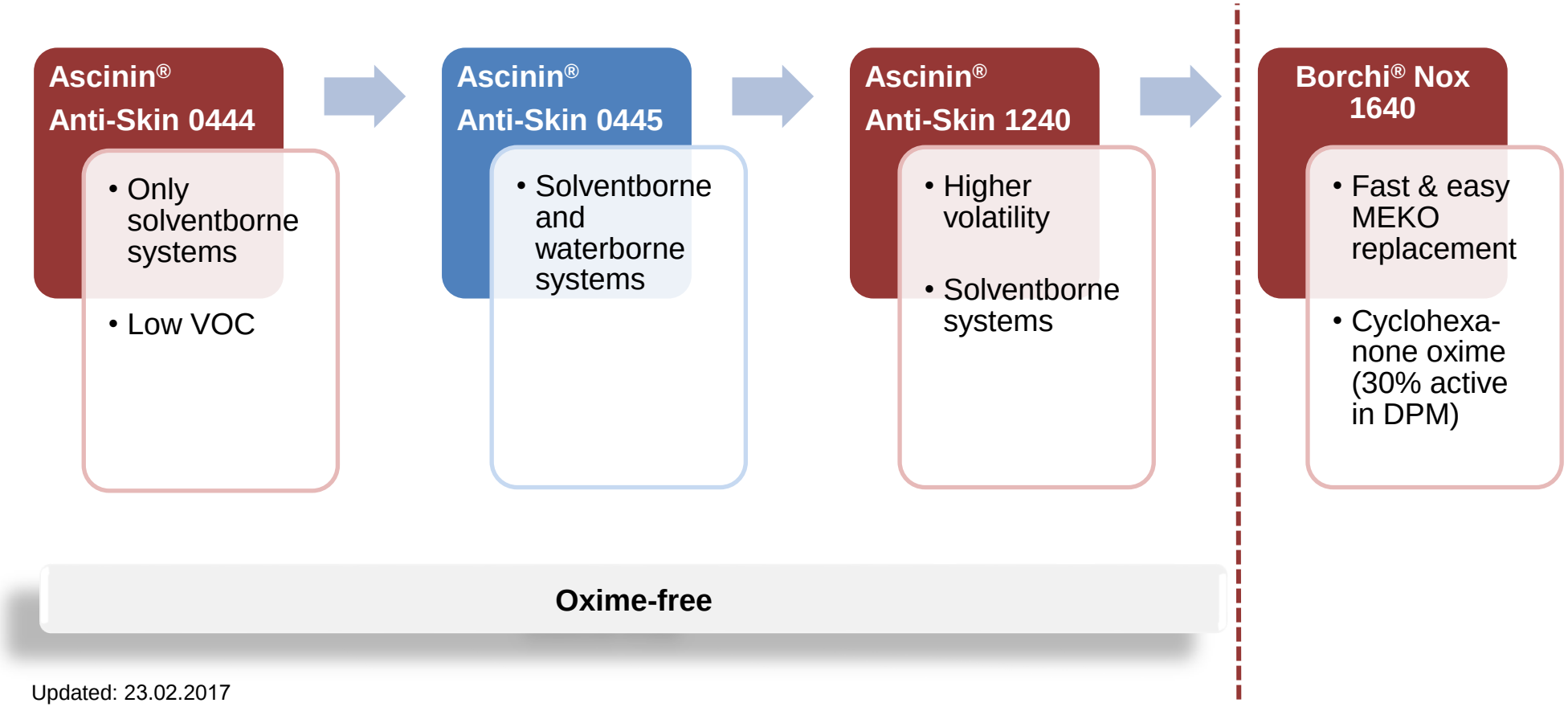
Product Overview



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