
Technical Information

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BASF SE

Cyclanon[®] Clear ECO Plus

Liquid auxiliary with a reductive effect for post-clearing dyeings on polyester, polyacrylonitrile, acetate and their blends. For use in the dyebath under acid conditions

Process shortening. Economic

Suitable for jet dyeing machines.

Chemical Character	Aqueous solution of organic reducing agents
Physical form	Clear, colourless to slightly yellowish liquid
Storage stability	<p>When stored properly in sealed containers, Cyclanon® Clear ECO Plus can be kept at temperatures between 0 and 35 °C for up to 12 months. Partly used containers should be kept tightly closed and used up as soon as possible.</p> <p>The product may solidify at low temperatures but can be melted again by warming without any separation occurring.</p> <p>Do not bring into contact with strong oxidizing agents such as hydrogen peroxide, sodium chlorite, sodium hypochlorite or Ludigol®.</p>
Note on safe handling, storage, disposal and ecology	Before first use, please pay attention to the information in the current Safety Data Sheet.

Properties

Product specification	Tolerances for test characteristics are given in the product specification.
pH-Value	Approx. 9,5 (as delivered, at 23 °C)
Ion activity	Anionic
Stability	<p>Not spontaneously flammable</p> <p>Resistant to hard water and alkalis.</p> <p>Aqueous, alkaline stock solutions of Cyclanon® Clear ECO Plus are stable in air at room temperature for at least two days.</p> <p>Should not be mixed with acids in the mixing vessel but can be mixed in the dyeing machine.</p>
Solubility	<p>Cyclanon® Clear ECO Plus is freely miscible with water in all proportions.</p> <p>The product property data merely provide an indication of how the product is to be used. They do not constitute the agreed quality of the product, nor are they the object of regular quality control tests.</p>

Action

Cyclanon® Clear ECO Plus has an excellent reductive effect during the cooling stage in acid dye baths and is ideal for removing unfixed disperse dyes from polyester, wool, natural silk, acetate and cellulosic fibres and for simultaneously decolourizing the dye bath.

Cyclanon® Clear ECO Plus does not increase the tendency of PES to release oligomers, a tendency that depends very much on the quality of the material. No increase in the amount of oligomers on the fibres is found in yarn dyeing when the dye bath is dropped at high temperatures. However, it has been found that a filter effect may occur when certain types of PES material that release significant amounts of oligomers are dyed in the form of tightly wound packages and reductive clearing is carried out in the same bath. In such cases, the goods must be cleared in a fresh bath.

Application

Cyclanon® Clear ECO Plus is used to remove unfixed disperse dyes from dyeings on polyester, polyacrylonitrile and acetate fibres, as well as from blends of polyester with polyacrylonitrile, wool, silk and cellulosic fibres. With blends containing elastane fibres, preliminary trials are necessary.

In addition to removing the loosely attached surface dye on the fibres, Cyclanon® Clear ECO Plus destroys residual non-exhausted dye in the dyebath.

Cyclanon® Clear ECO Plus is extremely effective in a cooling, acid dyebath. The pH of the dyebath should lie between 4.0 and 4.5, since the product is more effective at lower pH values. When the reductive clearing agent has completely reacted, the pH of the liquor is practically neutral.

Cyclanon® Clear ECO Plus can be applied in all the usual dyeing machines. As it forms no foam and is stable to air, it can even be used to advantage in jet dyeing machines.

Since there is no need to alkalize the dyebath or set a fresh postclearing bath, or to acidify the polyester after alkaline post-clearing, less time, energy, water, and chemicals are required and the waste water is much cleaner.

Application rate

The amount of Cyclanon® Clear ECO Plus required depends on the depth of shade of the dyeing to be cleared and the pH. The following guideline recipes are recommended (preliminary trials!):

Post-clearing of dyeings on PES, PAN and PES/PAN

0.5–2 g/l Eulysin® S or acetic acid (add before the Cyclanon® Clear ECO Plus)

- For medium shades 0,5 – 0,7 ml/l Cyclanon® Clear ECO Plus
- For dark shades 0,7 – 1,2 ml/l Cyclanon® Clear ECO Plus

Clear for 10 – 20 min at 70 – 80 °C, rinse hot and cold.

To clear dark shades on PES/PAN in the dyebath, it may be necessary to add Uniperol KA-P to avoid a filter effect on precipitates formed when anionic auxiliaries come into contact with cationic dyes. Alternatively, the dyeing may be cleared in a fresh bath.

With difficult dye combinations or very deep shades, the addition of 0.5–2 g/l Setamol® X-D and/or 1–2 g/l Uniperol™ Multifunction O Micro improves the clearing effect and the standard of fastness.

Post-clearing of dyeings on acetate

Dyeings on acetate can also be post-cleared at acid pH by the new process without causing damage to the fibres:

- 0.5 g/l Eulysin® S or acetic acid (add before the Cyclanon® Clear ECO Plus)
- 1.0 g/l Cyclanon® Clear ECO Plus

Clear for 15 min at 50 – 60 °C, rinse.

Reductive intermediate clearing of dyeings with disperse and

reactive dyes on PES/CEL blends

Reductive intermediate clearing of these blends with Cyclanon® Clear ECO Plus is preferable to the conventional process using a strongly alkaline bath, because it more reliably establishes the optimum pH for the reactive dyeing. The goods must be thoroughly rinsed to remove the reducing agent before the reactive dyeing is carried out.

Safety

When using this product, the information and advice given in our **Safety Data Sheet** should be observed. Due attention should also be given to the **precautions** necessary for handling chemicals.

Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, pro-portions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed. Responsibility for compliance with the requirements of the downstream textile market rests with the textile processor.

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