Liquid reducing agent for clearing dyeings on polyester, polyacrylonitrile, cellulose acetate and their blends. Applied in the dyebath and most effective under acidic conditions.

Replaces alkali clearing procedures thus providing productivity and environmental benefits.

Recommended product for BASF Basojet® System.
Cyclanon® ECO

**Nature**  
Aqueous solution of a sulphinic acid derivative, anionic.

**Physical Form**  
Clear yellow liquid.

**Storage**  
Under the proper conditions, Cyclanon ECO can be stored for up to 24 months in closed containers at temperatures between 32 and 90°F. At low temperatures, the product may solidify, but will regain its homogenous liquid appearance upon warming up. Partly used containers should be kept tightly closed and used up as soon as possible.

**Properties**

**Specific Gravity**  
Approximately 1.37 g/ml (11.4 lbs / gal)

**pH**  
Approximately 10-11.5

**Solubility**  
Cyclanon ECO is freely miscible with water. It has no unpleasant odor and is not spontaneously flammable.

**Stability**  
Stable to hard water and alkalis. Do not mix product directly with acids; add acid after Cyclanon ECO to the dyebath. Aqueous alkaline stock solutions of Cyclanon ECO are stable to air at room temperature for at least two days.

**Compatibility**  
Do not bring into contact with strong oxidizing agents such as hydrogen peroxide, sodium chlorite, sodium hypochlorite or Basotol®. Compatible with anionic and nonionic products. Precipitation may occur with cationic auxiliaries or dyes. In such cases the aftertreatment should be carried out in a fresh bath.

**Ecology**  
Cyclanon ECO is readily biodegradable/eliminable.
Cyclanon® ECO

**Action**

Cyclanon ECO has an excellent reductive effect in acidic dyebaths during the cooling stage, and is very suitable for removing unfixed disperse dyes from polyester (PES), wool, natural silk, cellulose acetate and cellulosic fibers, and for decolorizing the dyebath.

Cyclanon ECO does not increase the tendency of polyester to release oligomers, a tendency that very much depends on the quality of the material. In the dyeing of yarn, when the dyebath is drained at high temperature, no increase in the amount of oligomers on the fibers is found. However, it has been found that when certain types of polyester material are dyed in the form of tightly wound packages, filtration effects can occur, if the reductive clearing is carried out in the same bath, as the material releases more oligomers. In such cases, the goods must be cleared in a fresh bath.

**Applications**

**Acid**

**Reductive Clear**

Cyclanon ECO is used to remove unfixed disperse dyes from freshly dyed polyester, polyacrylonitrile and cellulose acetate fibers, as well as from blends of polyester with polyacrylonitrile, wool, silk and cellulosic fibers. With blends containing elastane fibers, the suitability of the product must be verified in trials.

The product also destroys residual non-exhausted dye in the dyebath, together with loosely attached dye on the fabric.

Cyclanon ECO is highly effective in acid dyebaths during the cooling stage.
**Application**

The pH value of the dyebath should not exceed 5; the product is more effective at lower pH values. When the reductive clearing agent has completely reacted, the pH value of the liquor is practically neutral.

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

**Advantages**

As there is no need to add alkali to the dyebath or to the fresh clearing bath, or to acidify the polyester after the alkaline treatment, less time, energy, water and chemicals are required and the wastewater is much cleaner.
Cyclanon® ECO

**Guideline**

The quantity of Cyclanon ECO required depends on the depth of shade of the dyeing to be cleared, and the pH value.

**Reductive clearing of dyeings on PES, PAN and PES/PAN**

If necessary, i.e. in a fresh bath, adjust pH to less than 5 with 0.5 - 2 g/l Eulysin® S or acetic acid (add before Cyclanon ECO)

- for medium shades: 1.4 - 2.1 g/l Cyclanon ECO (1.0 - 1.5 ml/l)
- for dark shades: 2.1 - 3.4 g/l Cyclanon ECO (1.5 - 2.5 ml/l)

Clear for 10 - 20 min at 160 – 175 °F

160°F for dyeings on Nylon(PAN), rinse.

To clear dark shades on PES/PAN in the dyebath, it may be necessary to add Uniperol® KA to avoid precipitation when the anionic auxiliary comes into contact with cationic dyes, or to clear the dyeing in a fresh bath.

**Guideline Recipes acetate**

**Reductive clearing of dyeings on cellulose acetate**

Dyeings on cellulose acetate can also be reductively cleared by the new process under acidic conditions, with less damage to the fibers:

0.5 g/l Eulysin® S or acetic acid (add before Cyclanon ECO)
2.0 g/l Cyclanon ECO

Clear for 15 min at 50 - 60°C, rinse.

**Polyester/cotton**

**Reductive intermediate clearing of dyeings with disperse and reactive dyes on polyester/cotton blends**

Reductive intermediate clearing of these blends with Cyclanon ECO is advantageous over the conventional process in a strong alkaline bath, as the resulting pH is closer to the optimum for the reactive dyeing. The goods must be thoroughly rinsed to remove the reducing agent completely before dyeing the cotton with reactive dyes.
Safety

We know of no ill effects that could have resulted from using Cyclanon® ECO for the purpose for which it is intended and from processing it in accordance with current practice.

According to the experience that we have gained over many years and other information at our disposal, Cyclanon® ECO does not exert any harmful effects on health, provided that it is used properly, due attention is given to the precautions necessary for handling chemicals, and the information and advice given in our Material Safety Data Sheet are observed.

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Note: Material Safety Data Sheet is available upon request.