

PERMA-CARE ULF

Self Catalyzed, Ultra Low Formaldehyde Resin

Characteristic : Modified DMDHEU.

Appearance : Yellowish liquid.

Properties :

- Cellulose fiber, besides excellent properties like hydrophilicity, softness etc has also some natural deficiencies. Cotton fiber shrink, reshaped & wrinkle easily.
- **PERMA-CARE ULF** forming cross-links between adjacent cellulose polymer chains which give cotton some elastic and resiliency properties. Cross-linked cotton can recover from deformation stresses and thus wrinkles will not form.
- **PERMA-CARE ULF** is a buffered, precatalysed, modified DMDHEU based reactant which provides extremely low formaldehyde release in pre-cure and garment finishing while retaining good physical properties on fabric.
- **PERMA-CARE ULF** is used on knit-wear for dimensional stability and shrink resistance after laundry.
- **PERMA-CARE ULF** is also advised for the following garment effects,
 - On pile fabrics, improved stand of pile by better elastic resilience,
 - Calendared and Chintzed shiny fabrics,
 - Crushed fabrics,
 - Retention of irregular creases and wrinkles on denim garments.
- **PERMA-CARE ULF** ensures minimized tendency to yellowing.
- The major application methods are pre-cure, post-cure, garment dip, spray application. In order to introduce sharpe and durable creases to garments, in post-cure system, **PERMA-CARE ULF** is padded on to the fabric and dried at low temperature. After garment construction and crease formation, garments are thermoset at HT condition to cross-link the resin.
- The base fabric must have sufficient strength to withstand curing loss, about 20 %.

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- Fabric should have excellent absorbency to allow **PERMA-CARE ULF** to penetrate into the very interior of the fibres and form cross links. Surface adhering **PERMA-CARE ULF** does not serve useful purpose and result will be inefficient.

In case of poor hydrophilicity or tightly woven fabric, we advise,

E WET ESC N 3 g/L

into resin bad.

- Fabric should be desized thoroughly.
- PH of fabric should be around 6 - 6,5 and uniform throughout whole length and surface. For this purpose, we recommend EXOLINE 3H which is nonvolatile organic acid. EXOLINE 3H does not evaporate during drying temperature in stenter prior to resin treatment. Acetic or formic acids are volatile acids, evaporates in stenter, so fabric final pH is not stable and wrinkle-free finish is not uniform and fabric shade becomes yellow.

EXOLINE 3H 2 - 3 g/L

- pH of padder should be around pH 4 - 6,5 to prevent formaldehyde generation. It is advisable to add, non-volatile acid as;

EXOLINE 3H 1 g/L

- In order to have better CRA performance on viscose fabrics,

EXOLINE 3H 2 - 3 g/L

PERMA-CARE ULF 10 - 20 % higher amount

is advised.

Because amorphous area of viscose is higher compared to cotton fiber.

- In case of color fixing agent treated fabrics, **PERMA-CARE ULF** amount is overdosed by 10 %.
- In the production of schreiner and chintz finishes, fabric is dried at low temp. like 130 - 140 °C with a residual moisture 6 - 10 %. After embossing or calendaring curing is performed as usual.

Solubility : Soluble in water at all ratios.

pH(25 °C) : 3 - 4

Applications : PERMA-CARE ULF is applied in the padder on cotton, viscose and synthetic blends at room temp. Usage suggestion;

	<u>Knit, Cotton</u>	<u>Woven, Cotton</u>	<u>Woven, CO/PES</u>	<u>Viscose</u>
PERMA-CARE ULF	20 - 40 g/L	40 - 60 g/L	40 - 60 g/L	60 - 90
Mgcl ₂ , 10 %	2 - 4	2 - 6	2 - 6	6 - 9
UNISIL LYC	20 - 40 g/L	20 - 40 g/L	20 - 40 g/L	20 - 40
UNISOFT PEC NEW	20 - 30 g/L	20 - 30 g/L	20 - 30 g/L	20 - 30
EXOLINE 3H	1	1	1	3
E WET ESC N	3	3	3	3
pH	4 - 6,5	4 - 6,5	4 - 6,5	4 - 6,5
Pick-up, %	80 - 100	80 - 100	80 - 100	80 - 100
Temp.	180 °C	180 °C	180 °C	180 °C
Time	1 min	1 min	1 min	1 min

- In case of low curing temperature and short reaction time, poor CRA values and higher formaldehyde content is inevitable.

Storage : 6 months.

These data are based on our practical experience and may be recommended only without any liability, due to the different plant conditions.

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