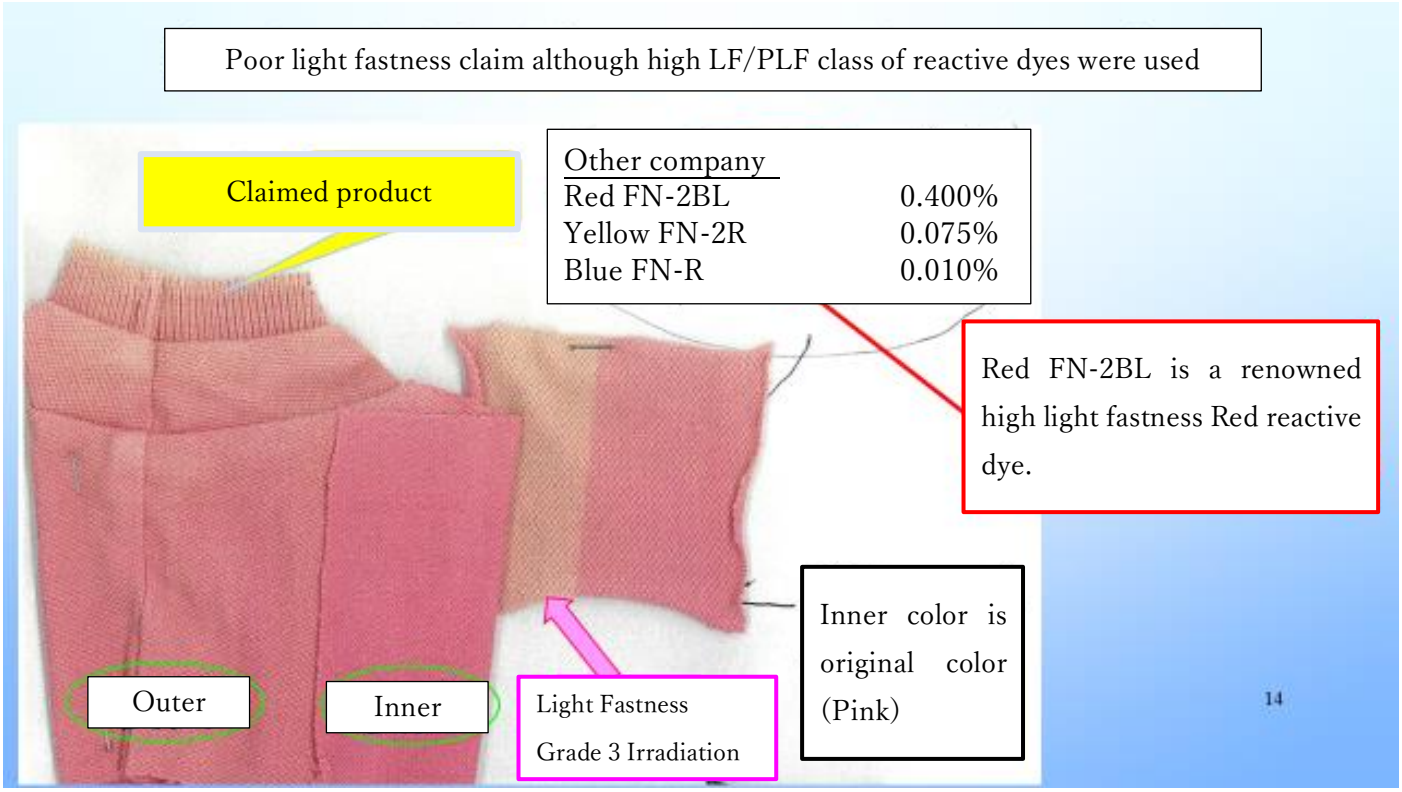
Technical Information

(vol.16)

Nippon Kayaku (Thailand) CO., LTD.
Technical Service Center

[Poor light fastness despite using high light and perspiration light fastness dyes]

- This technical information document is an explanation on the problem and solution to a problem one of our customers experienced.



- A textile dyeing customer received a claim due to the low light fastness issue on their garment. The fabric, despite using one of the high light fast dyes from another company, had poor light fastness.
- As the dyes they are using are reputable high light fastness dyes, the issue was suspected not to be caused by the dye, but by one of the processes in the dyeing and finishing process.
- This issue is usually common in decolorization and redyeing of reactive dyes after cationic fixing treatments.
- After reconfirming the dyeing processes of the customer, it was discovered as follows:

1) Decolorization and redyeing was conducted.
2) Fixing treatment was also conducted to provide consistent hand feel of the fabric with the deeper shade dyed fabric.

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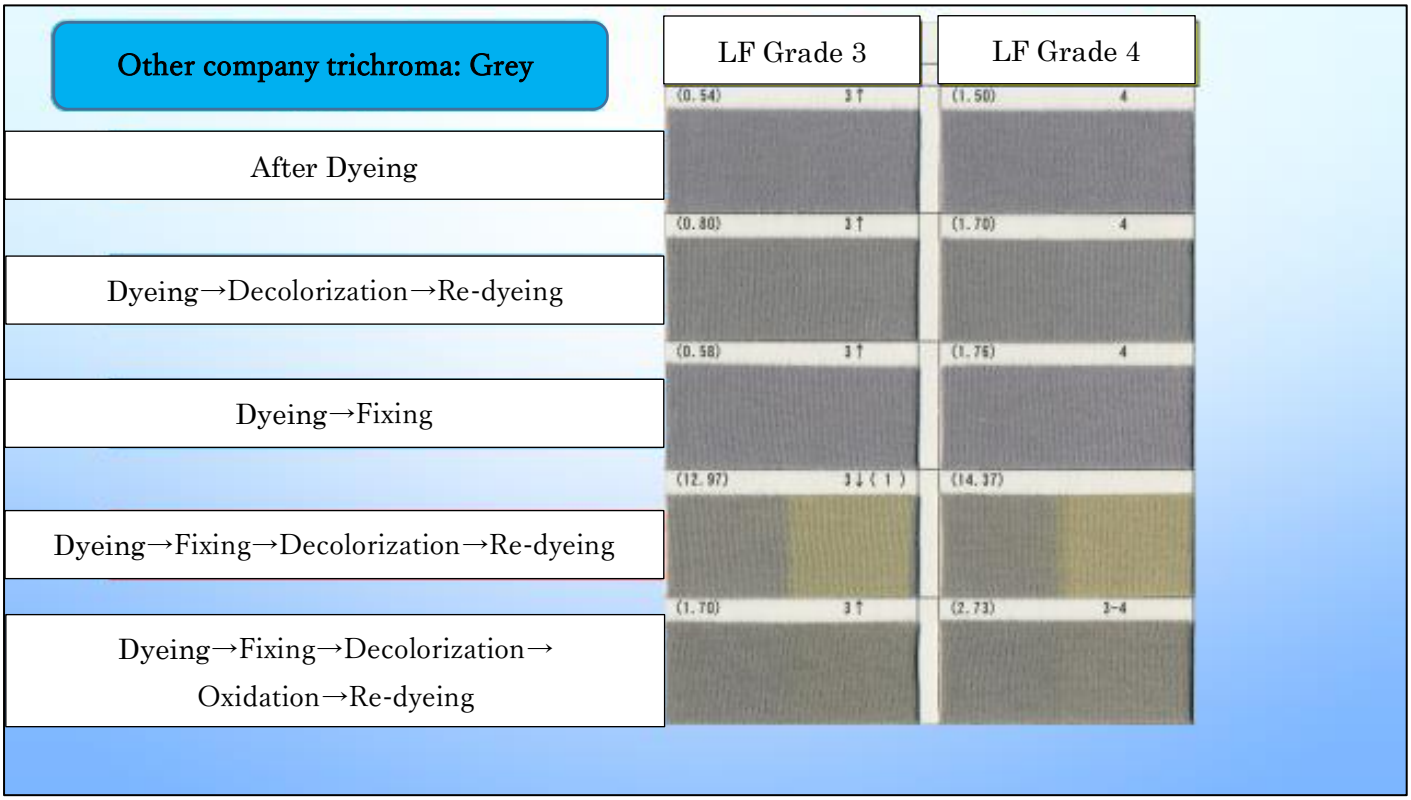
- The issue was caused by the process of:
  Dyeing → Cationic Fixing treatment → Decolorization by reduction (with Anionic agents for cationic masking) → Redyeing.
- As shown in the test results below, the light fastness of reactive dye dyeing → cationic fixing treatment → hydrosulfite reduction decolorization → re-dyeing is at a terrible level, which seems to have a claim occurrence rate of 100%.
- After reduction decolorization, if hydrogen peroxide bleaching condition treatment is performed before re-dyeing, then the light fastness levels may recover to acceptable levels.
- It should be different depending on the dye used, so it is recommended to confirm with actual tests.
- Please note that we have not confirmed the relationship between the use of cationic softeners and the light fastness after reduction decolorization.



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