



US012344991B2

(12) **United States Patent**
Liao et al.

(10) **Patent No.:** **US 12,344,991 B2**
(45) **Date of Patent:** **Jul. 1, 2025**

(54) **DECOLORIZATION METHOD OF
POLYESTER FABRIC**

(71) Applicant: **NAN YA PLASTICS
CORPORATION**, Taipei (TW)

(72) Inventors: **Te-Chao Liao**, Taipei (TW); **Jung-Jen
Chuang**, Taipei (TW); **Zhang-Jian
Huang**, Taipei (TW); **Yun-Tong Lai**,
Taipei (TW)

(73) Assignee: **NAN YA PLASTICS
CORPORATION**, Taipei (TW)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 448 days.

(21) Appl. No.: **17/865,925**

(22) Filed: **Jul. 15, 2022**

(65) **Prior Publication Data**

US 2023/0082495 A1 Mar. 16, 2023

(30) **Foreign Application Priority Data**

Sep. 13, 2021 (TW) 110133937

(51) **Int. Cl.**
D06L 4/13 (2017.01)
D06L 4/15 (2017.01)
(Continued)

(52) **U.S. Cl.**
CPC **D06L 4/13** (2017.01); **D06L 4/15**
(2017.01); **D06L 4/22** (2017.01); **D06L 4/30**
(2017.01);
(Continued)

(58) **Field of Classification Search**
None

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,356,437 A 10/1994 Pedersen et al.
5,711,764 A 1/1998 Wasinger
(Continued)

FOREIGN PATENT DOCUMENTS

CN 1070970 A 4/1993
CN 104420191 A 3/2015
(Continued)

OTHER PUBLICATIONS

Nippon Kayaku Co., Ltd., "Kayadecolor KP-SP", Dec. 12, 2005,
http://web.archive.org/web/20061008032844/http://www.nipponkayaku.co.jp/japan/kagaku/shikizai/adjutant/adjutant_pdf/kayadecolor_kpsp.pdf.

(Continued)

Primary Examiner — Katie L. Hammer

(74) *Attorney, Agent, or Firm* — Li & Cai Intellectual
Property (USA) Office

(57) **ABSTRACT**

A decolorization method of a polyester fabric includes:
providing a polyester fabric, in which the polyester fabric is
a dyed polyester fabric and the polyester fabric is adhered
with a dye and has a first L value; providing a first decol-
orizing solution and a second decolorizing solution, in
which the first decolorizing solution contains a reductant and
the second decolorizing solution contains an oxidant; and
performing a decolorization process which includes: using
one of the first decolorizing solution and the second decol-
orizing solution to decolorize one portion of the dye and
using another one of the first decolorizing solution and the
second decolorizing solution to decolorize another portion
of the dye, so that a color of the dye is removed and the
polyester fabric is white in color and has a second L value
that is greater than the first L value.

7 Claims, 1 Drawing Sheet

