

US012410299B2

(12) United States Patent

Liao et al.

(54) DISPOSAL METHOD FOR WASTE FABRIC CONTAINING POLYESTER, SPANDEX, AND DYF

(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); Tzu-Huan Wong,

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 856 days.

(21) Appl. No.: 17/689,966

(22) Filed: Mar. 8, 2022

(65) **Prior Publication Data**

US 2023/0131718 A1 Apr. 27, 2023

Related U.S. Application Data

(63) Continuation-in-part of application No. 17/568,730, filed on Jan. 5, 2022, now Pat. No. 12,269,077.

(30) Foreign Application Priority Data

Oct. 21, 2021	(TW)	 110139088
Jan. 21, 2022	(TW)	 111102619

(51) Int. Cl.

 C08J 11/28
 (2006.01)

 C08J 11/14
 (2006.01)

 C08J 11/16
 (2006.01)

(52) U.S. Cl.

 (10) Patent No.: US 12,410,299 B2

(45) **Date of Patent:**

Sep. 9, 2025

(58) Field of Classification Search

(56) References Cited

U.S. PATENT DOCUMENTS

3,696,058 A 10/1972 Teti 4,783,193 A * 11/1988 Pensa C08J 7/00 8/102

(Continued)

FOREIGN PATENT DOCUMENTS

CN 107849206 3/2018 CN 106146877 2/2019 (Continued)

OTHER PUBLICATIONS

Martin, A. Chapter 4. Colour Management in the Graphic Technologies-4.4 Lab Colour Space and Delta E Measurements. In Graphic Design and Print Production Fundamentals. Accessed at https://opentextbc.ca/graphicdesign/chapter/4-4-lab-colour-space-and-delta-e-measurements/. (Year: 2015).*

(Continued)

Primary Examiner — Christina H.W. Rosebach (74) Attorney, Agent, or Firm — JCIPRNET

(57) ABSTRACT

A disposal method for waste fabric containing polyester, spandex, and dye includes the following steps: step (a): providing a waste fabric containing polyester, spandex, and dye; and step (b): performing a first-stage treatment including elution on the waste fabric to obtain a first liquid material and a first solid material. The first-stage treatment includes elution with a cosolvent mixed with an oxidant. The first solid material includes recycled polyester, and/or the first liquid material includes recycled spandex or degraded spandex.

9 Claims, 1 Drawing Sheet

