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(54) **Slurry cast double base propellants.**

(57) A slurry casting process is described capable of producing crosslinked double base propellant having improved burning rates and high specific impulse. The crosslinked matrix is obtained by curing a admixture of nitrocellulose, a polyol and a polyfunctional isocyanate crosslinking agent. Such propellants can be formulated to be smokeless. Improved burning rates are achieved by incorporating into a slurry of double base composition, casting powder granules containing 20% to 75% by weight of small particle ammonium perchloroate. The casting powder granules substantially retain their identity in the cured propellant matrix. The casting powder granules have a high burning rate and are uniformly distributed throughout the propellant. The granules are responsible for increasing the burning rate of the entire crosslinked double base propellant composition of the invention.

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# EUROPEAN SEARCH REPORT

Application number
EP 80 30 4590

## DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim |
|---|---|---|
| | GB - A - 2 022 112 (HERCULES INC.)<br>* Claims 1-9; page 5, lines 51-65; table I; page 2, lines 41-45 * | 1-7 |
| | US - A - 4 080 411 (N.F. STANLEY)<br>* Claims 1,4-8,11; examples 1,2; column 3, lines 36-57 * | 1,2,4-7 |
| | GB - A - 1 427 697 (HERCULES INC.)<br>* Claims 1,2,6-10,13,14; page 4, lines 26-50 * | 1-7 |
| | US - A - 3 726 729 (E.M. PIERCE)<br>* Claims 1-4; column 2, lines 64-66; column 3, lines 28-59 * | 1-7 |
| A | US - A - 3 711 343 (T.E. DUNIGAN et al.) | |
| A | US - A - 3 813 458 (R.L. SIMMONS) | |

CLASSIFICATION OF THE APPLICATION (Int. Cl.³)

C 06 B 45/10
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TECHNICAL FIELDS SEARCHED (Int. Cl.³)

C 06 B 21/00
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CATEGORY OF CITED DOCUMENTS

X: particularly relevant
A: technological background
O: non-written disclosure
P: intermediate document
T: theory or principle underlying the invention
E: conflicting application
D: document cited in the application
L: citation for other reasons

&: member of the same patent family, corresponding document

X The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| The Hague | 22.05.1981 | VAN MOER |