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OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,
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EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,

(54) Title: METHOD OF PREPARING PHOSPHORUS-CONTAINING FLAME RETARDANTS AND THEIR USE IN POLYMER COMPOSITIONS

(57) Abstract: A phosphorus-containing flame retardant is produced by reacting at a reaction temperature a mixture including a metal or suitable metal compound and a stoichiometric excess relative to the metal or suitable metal compound of an unsubstituted or alkyl or aryl substituted phosphonic or pyrophosphonic acid, wherein the phosphonic or pyrophosphonic acid is in a molten state at the reaction temperature. The chemical composition of the resulting flame retardant product leads to excellent flame retardancy and exhibits high thermal stability. The presently disclosed flame retardants are useful, for example, in polymer compositions, particularly thermoplastics processed at high temperatures, over a wide range of applications.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, CHEM ABS Data, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2016/032076 A1 (STOCKDALE ZACHARY D [US] ET AL) 4 February 2016 (2016-02-04) abstract; claims 1-6 formula (I)	1-54
A	----- DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; 22 April 2001 (2001-04-22), MATROSOV, E. I. ET AL: "Spectra and structure of acid salts of methylphosphinic acid and of their condensation products", XP002793970, retrieved from STN Database accession no. 1965:450893 abstract ----- -/--	1-54

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"&" document member of the same patent family

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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Schütte, Maya

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>KARAYANNIS N M ET AL: "Reactions between diisopropyl methylphosphonate and halides of divalent metal ions", ZEITSCHRIFT FÜR ANORGANISCHE UND ALLGEMEINE CHEMIE, WILEY-VCH, DE</p> <p>vol. 384, no. 3 1 September 1971 (1971-09-01), pages 267-279, XP009515814, ISSN: 0044-2313, DOI: 10.1002/ZAAC.19713840312 Retrieved from the Internet: URL:https://api.wiley.com/onlinelibrary/tdm/v1/articles/10.1002%2Fzaac.19713840312 [retrieved on 2019-09-04] abstract; table 1 pages 277-278 page 269, paragraph 1</p>	1-54
A	<p>----- WO 2016/014113 A1 (CHEMTURA CORP [US]) 28 January 2016 (2016-01-28) abstract formula(IV) -----</p>	1-54

INTERNATIONAL SEARCH REPORT

Information on patent family members

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