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• **Univerzita Pardubice**
53009 Pardubice (CZ)

(72) Inventors:
• **Matyáš, Robert**
533 42 Zivanice (CZ)
• **Musil, Tomáš**
742 65 Rybi (CZ)

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(71) Applicants:
• **Austin Detonator s.r.o.**
Jasenice 712
755 01 Vsetín (CZ)

(74) Representative: **Halaxová, Zdenka**
Halaxová & Halaxová Tetrapat
Jinonická 80
158 00 Praha 5 (CZ)

(54) **Igniting substance mainly for industrial detonators with the explosion delay time up to 9000 ms after ignition, methods of its production, and industrial electric detonator and industrial non-electric detonator**

(57) An igniting substance mainly for detonators made of a metallic salt of 4,6-diazido-N-nitro-1,3,5-triazine-2-amine selected from a group of salts containing silver salt, copper(I) salt and copper(II) salt, with the following skeletal formula



where M is a metal selected from a group comprising silver and copper:

M = Ag, m = 1, n = 1, x = 1 for silver salt,

M = Cu, m = 1, n = 2, x = 2 for copper(I) salt,

M = Cu, m = 2, n = 2, x = 1 for copper(II) salt.

Production method of silver salt of 4,6-diazido-N-nitro-1,3,5-triazine-2-amine, when the heated aqueous solution of 4,6-diazido-N-nitro-1,3,5-triazine-2-amine is mixed with the aqueous solution of silver nitrate AgNO₃ and, while stirring vigorously, the silver salt of 4,6-diazido-N-nitro-1,3,5-triazine-2-amine is precipitated and then filtered off and dried at laboratory temperature.

Production method of silver salt of 4,6-diazido-N-nitro-1,3,5-triazine-2-amine, when the heated aqueous solution of 4,6-diazido-N-nitro-1,3,5-triazine-2-amine is

mixed with the aqueous solution of silver nitrate AgNO₃ and, while stirring vigorously, the silver salt of 4,6-diazido-N-nitro-1,3,5-triazine-2-amine is precipitated and then filtered off and dried at laboratory temperature.

A non-electric industrial detonator which has a casing in the form of a cup (1) with an inserted detonation tube (19) and a space (11) for the secondary explosive at the bottom of the cup (1) closed with a lid (15), where the space is closed at the top with a time-delay device (12) with a cylindrical case containing delay-action composition (14) and with the primary explosive (13) below it, above the space (11) for the secondary explosive as the igniting substance which is metallic salt of 4,6-diazido-N-nitro-1,3,5-triazine-2-amine selected from a group of salts containing silver salt, copper(I) salt and copper(II) salt.

An electric industrial detonator which has a casing in the form of a cup (2) with an inserted electric fuse head (25) provided with supply cables (26) where in the casing there is space (21) at least for the secondary explosive and for the time-delay device (14) with a cylindrical case containing delay-action composition (14) and with the primary explosive (13) below it, above the space (11) for the secondary explosive where the primary explosive (13) as the igniting substance is metallic salt of 4,6-diazido-N-nitro-1,3,5-triazine-2-amine selected from a group

of salts containing silver salt, copper(I) salt and copper(II) salt.



EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X,D	US 7 375 221 B1 (FRONABARGER JOHN WILLIAM [US] ET AL) 20 May 2008 (2008-05-20)	1,2	INV. C06B41/00
Y	* column 1, lines 50-55; column 5, line 40-55; scheme 6; examples 15-17 *	7,8	C06C7/00
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	* column 9, line 7 - line 21; figures 11-13 *		
A	----- TOMAS MUSIL ET AL: "Characterization of 4,6-Diazido-N-nitro-1,3,5-triazine-2-amine", PROPELLANTS, EXPLOSIVES, PYROTECHNICS., vol. 37, no. 3, 4 June 2012 (2012-06-04), pages 275-281, XP055385216, DE ISSN: 0721-3115, DOI: 10.1002/prep.201000166 * column 1, lines 8-11; conclusions *	1-8	

			TECHNICAL FIELDS SEARCHED (IPC)
			C07D C06C C06B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 27 June 2017	Examiner Kappen, Sascha
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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