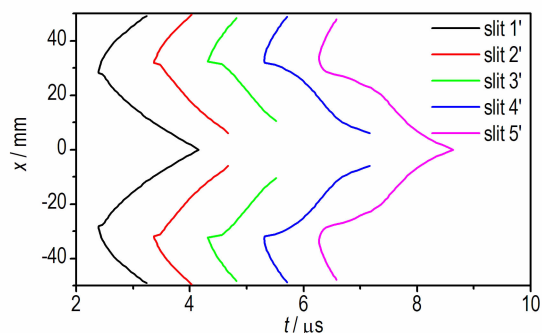
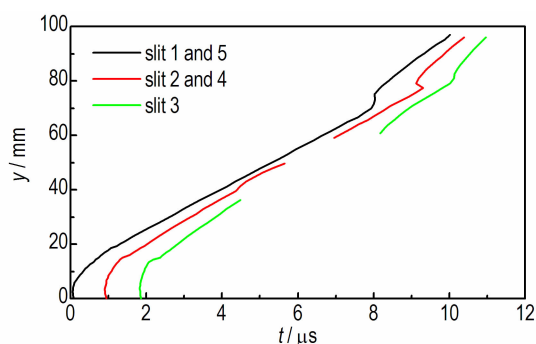


Wave Scanning Experiment of Composite Charge under Eccentric Initiation

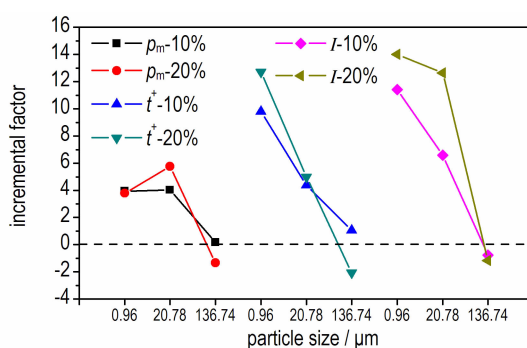


WANG Hui, SHEN Fei, TIAN Qing-zheng, REN Xin-lian,
YUAN Jian-fei

Chinese Journal of Energetic Materials, 2015, 23(11): 1041–1045

The detonation wave of composite charge under eccentric initiation was measured by the orthogonal multi-slit scanning technology. The detonation wave propagation velocity and direction at the intersection of two mutually perpendicular multi-slits were obtained.

Air Explosion Property of RDX-based Titanium Hydride Composite Explosive



XUE Bing, MA Hong-hao, CHEN Wei, SHEN Zhao-wu

Chinese Journal of Energetic Materials, 2015, 23(11): 1046–1050

Air explosion experiments were carried out to investigate the influence of different TiH_2 contents and sizes on properties of RDX-based TiH_2 composite explosive. The solid explosion products were analyzed.

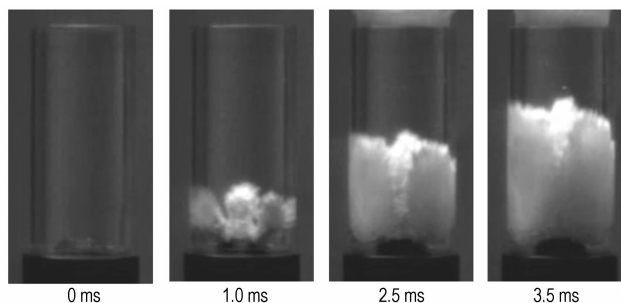
Storage Aging Mechanism and Safety of Certain Ammunition PBX Charge

YIN Jun-ting, LUO Ying-ge, CHEN Zhi-qun, LIU Yang

Chinese Journal of Energetic Materials, 2015, 23(11): 1051–1054

The PBX charge structures of certain ammunitions stored for 4, 8, 12, 16 years were investigated by CT scanning. The composition, density and precipitates of different storage periods were analyzed by gravimetric method, hydrostatic weighing method and IR.

Interaction between Cone-shaped Multiple Combustion Gas Jets and Liquid

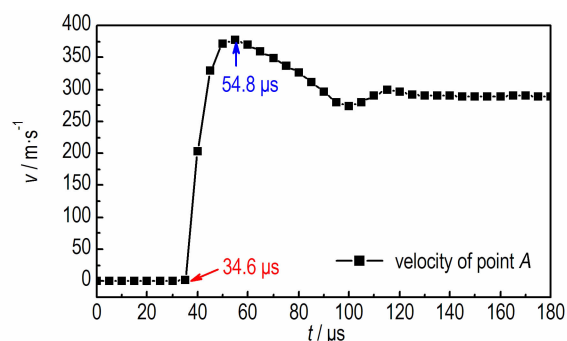


ZHAO Jia-jun, YU Yong-gang

Chinese Journal of Energetic Materials, 2015, 23(11): 1055–1060

The interaction between multiple combustion gas jets and liquid medium was studied using a high-speed camera system.

Movement Characteristics of Fuel-air Explosive (FAE) Clouds in the Explosion Dispersal Process

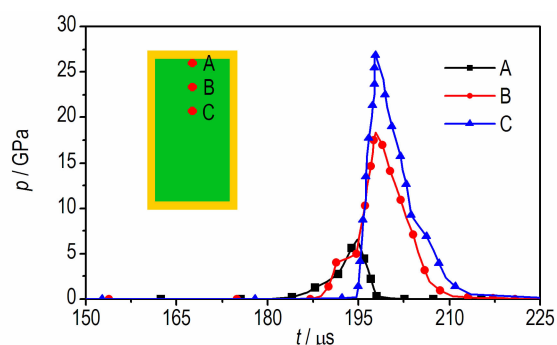


FANG Wei, ZHAO Sheng-xiang, LI Wen-xiang, JIA Xian-zhen, YAO Li-na

Chinese Journal of Energetic Materials, 2015, 23(11): 1061–1066

The formation and movement state of clouds of FAE with different densities in explosion dispersal process were investigated by numerical simulation, high-speed photography and photoelectric detection method.

Reaction Characteristics for Shelled Cast-cured PBX Explosive Impacted by Shaped Charge Jet

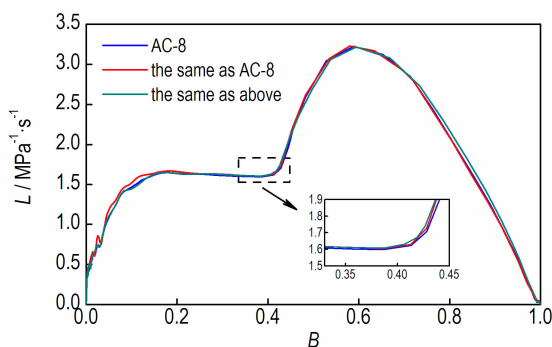


WANG Li-xia, GU Hong-ping, DING Gang, LIU Feng-wang, SUN Xing-yun

Chinese Journal of Energetic Materials, 2015, 23(11): 1067–1072

The impact test of the PBX explosive, overlaid by two groups of steel plates with thickness of 210, 255 mm and 165, 210 mm, was performed respectively by shaped charge with different forms and jet velocities, produced by the shaped charges with diameter of 82 mm.

Applied Study on the Grain Consolidation Propellant as Traveling Charge

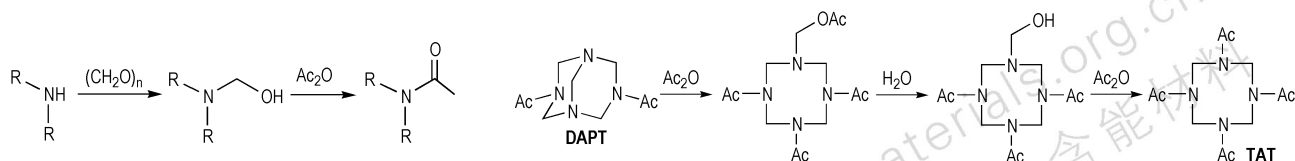


LIANG Tai-xin, XIAO Zhong-liang, Lü Bing-feng, MA Zhong-liang, DAI Shu-lan

Chinese Journal of Energetic Materials, 2015, 23(11): 1073–1078

A new traveling charge scheme was presented. The combustion performances of traveling charge were studied by experiment.

Acetolysis of *N*-hydroxymethyl Tertiary Amines and its Application in the Reaction of TAT from DAPT

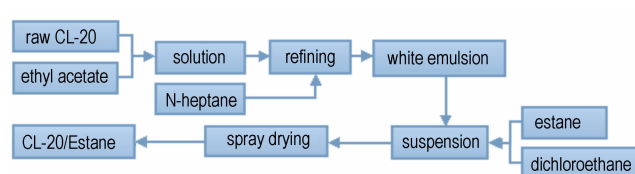


N-hydroxymethyl tertiary amines were prepared. The effect of ammonium nitrate on acetolysis reaction of *N*-hydroxymethyl tertiary amines was studied.

ZOU Po, WAN Zi-juan, LUO Jun

Chinese Journal of Energetic Materials, 2015, 23(11): 1079–1083

Preparation and Characterization of Nano- ϵ -CL-20 / Estane Explosive

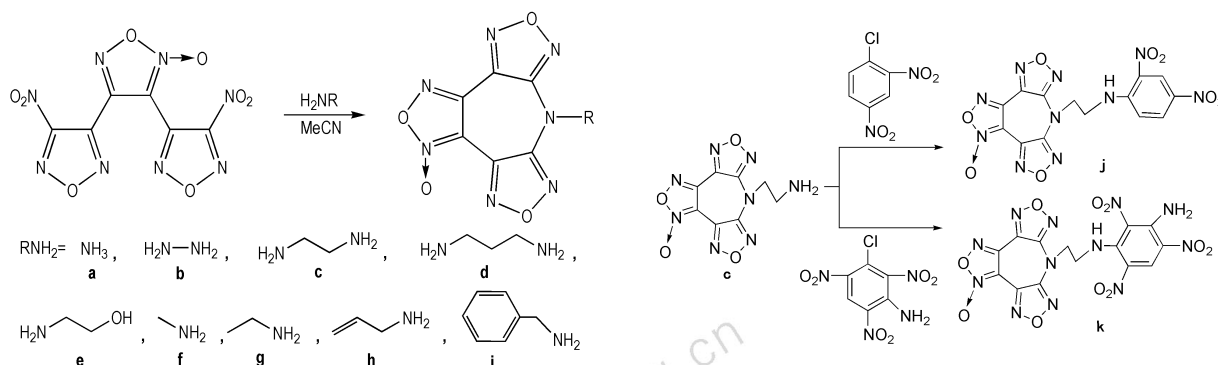


Jl Wei, LI Xiao-dong, WANG Jing-yu, AN Chong-wei

Chinese Journal of Energetic Materials, 2015, 23(11): 1084–1088

The ϵ -CL-20 / Estane system was prepared by suspension spray method.

Synthesis and Characterization of 7H-Difurazano [3, 4-b; 3', 4'-f] furoxano [3'', 4''-d] azepine and Derivatives

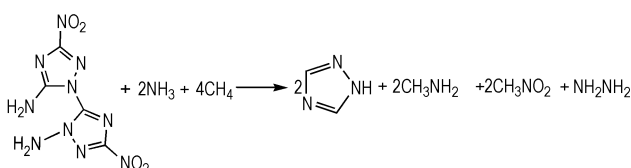


Nine kinds of 7H-difurazano [3, 4-b; 3', 4'-f] furoxano [3'', 4''-d] azepine (a-i) were synthesized, and the SN2 mechanism of cyclization was discussed. The structure of these compounds were characterized by ^1H NMR, ^{13}C NMR, IR and MS. The compound c was used to synthesize two new compounds (j, k).

XIA Cheng-bo, ZHENG Chun-mei, ZHANG Tao, XU Li-wen, WEI Wen-jie, WANG Feng-yun, LEI Wu, XIA Ming-zhu

Chinese Journal of Energetic Materials, 2015, 23(11): 1089–1094

Synthesis and Performance of 1-Amino-3-nitro-5-(5-amino-3-nitro-1, 2, 4-triazole-1-yl)-1, 2, 4-triazole

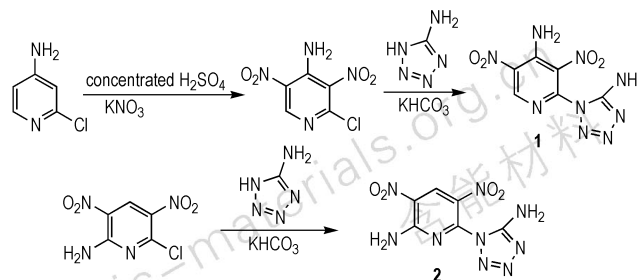


1-Amino-3-nitro-5-(5-amino-3-nitro-1, 2, 4-triazole-1-yl)-1, 2, 4-triazole (DANBT) was synthesized, and its structure and thermal performance were characterized by IR, MS, NMR and differential scanning calorimetry.

YI Qian-hong, HUANG Ming, TAN Bi-sheng, HE Yun, QU Yan-yang, LIU Yu-cun

Chinese Journal of Energetic Materials, 2015, 23(11): 1095–1098

Synthesis and Performance of Two New 1-Substituted 5-Aminotetrazole Energetic Derivatives

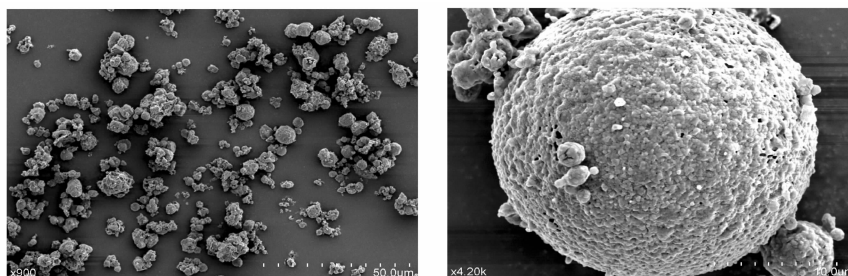


2-(5-Amino-tetrazol-1-yl)-3,5-dinitro-pyridin-4-amine (**1**) and 6-(5-amino-tetrazol-1-yl)-3,5-dinitro-pyridin-2-amine (**2**) were synthesized. Their detonation performance and thermal behaviors were studied.

ZHAO Kun, LIU Zu-liang, MA Cong-ming

Chinese Journal of Energetic Materials, 2015, 23(11): 1099–1102

Preparation and Characterization of Ultrafine CL-20/TNT Cocrysal Explosive by Spray Drying Method

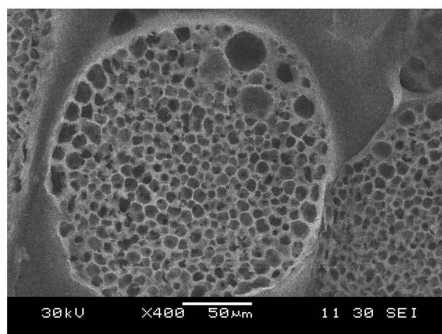


Ultrafine CL-20/TNT cocrysal explosive was prepared by a spray drying method. Its structure was characterized by scanning electron microscopy and X-ray diffraction and differential scanning calorimetry (DSC) were utilized to determine whether the cocrysal explosive was prepared. The impact sensitivity of cocrysal explosive was tested.

WANG Jing-yu, LI He-qun, AN Chong-wei, GUO Wen-jian

Chinese Journal of Energetic Materials, 2015, 23(11): 1103–1106

Preparation of Nitrocellulose-based Micro-pores Spherical Powder by Solvent Leaching Method



To simplify the preparation process of the nitrocellulose-based micro pore spherical powder and make the internal pore structure more uniform, a new preparation process named as leaching method was studied.

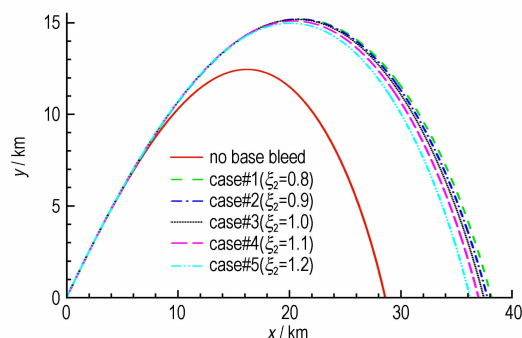
WANG Ping, ZHANG Lei, LIN Xiang-yang, ZHENG Wen-fang

Chinese Journal of Energetic Materials, 2015, 23(11): 1107–1110

Numerical Investigation on the Effect of Combustion Rate of Propellant on the Operation Process and Firing Range of the Base Bleed Projectile

LUO Xiao-cheng, YAO Wen-jin, XU Wen-ke, ZHUO Chang-fei, WU Xiao-song, FENG Feng

Chinese Journal of Energetic Materials, 2015, 23(11): 1111–1118



The flight ballistic of base bleed projectile was solved by using the computational aerodynamics coupled with particle trajectory. The changes of operation parameter, operation status, flow field of base bleed projectile with time in the drag reduction stage were studied.

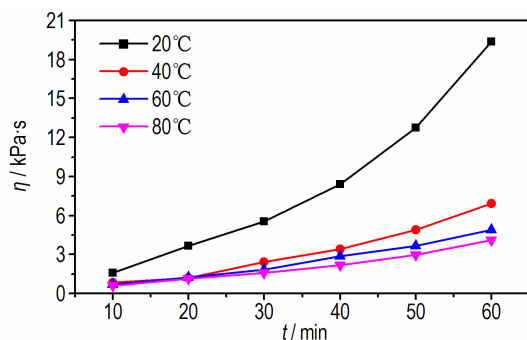
Effect of Graphite on Thermal Conduction Properties of TATB-based Polymer Bonded Explosives

LIN Cong-mei, LIU Jia-hui, HE Guan-song, GONG Fei-yan, HUANG Zhong, JIANG Yue-qiang, PAN Li-ping, ZHANG Jian-hu, LIU Shi-jun

Chinese Journal of Energetic Materials, 2015, 23(11): 1119–1123

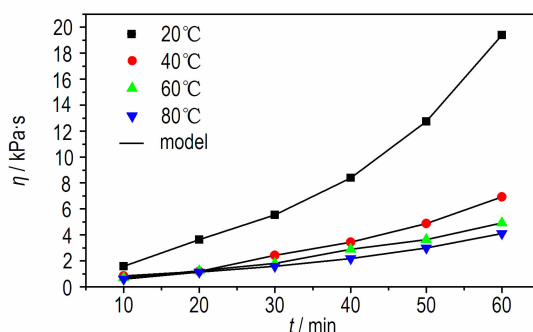
The thermal conductivity of TATB-based PBX and its formulations modified with graphite were investigated to explore the effects of graphite coating way, temperature and graphite content on the thermal performances.

Rheological Behavior of GAP/CL-20 based Composite Explosives Slurry



WEI Yan-ju, WANG Jing-yu, AN Chong-wei, LI He-qun

Chinese Journal of Energetic Materials, 2015, 23(11): 1124–1129



The rheological behavior, squeeze process temperature and the relationship between viscosity and temperature during the curing process of GAP / CL-20 based composite explosives slurry were characterized by viscosity measurement technology.

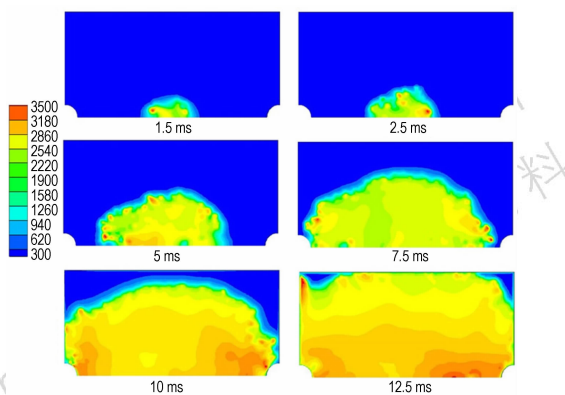
Accelerated Storage Life Test and Assessment Method for Explosive Initiator used on Aircraft

ZHAO Chang-jian, HONG Dong-pao, GUAN Fei, ZHANG Hai-rui

Chinese Journal of Energetic Materials, 2015, 23(11): 1130–1134

An accelerated storage life model describing the relation of storage life and storage temperature for explosive initiator was established and a method suited for testing and evaluating the accelerated storage life of explosive initiator used for aircraft was proposed via a combination of sensitivity test and accelerated test.

Simulation of Aluminum Dust Explosion under Flow State



SHEN Shi-lei, ZHANG Qi, CHEN Jia-chen, MA Qiu-ju,
LI Dong, YAN Hua

Chinese Journal of Energetic Materials, 2015, 23(11): 1135–1139

Aluminum dust dispersion and flame propagation varying with time in 20 L cylindrical confined chamber were simulated. The factors influencing flame velocity were analyzed.

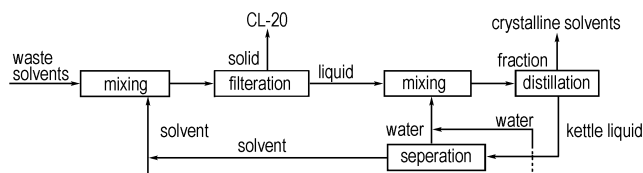
Autocatalytic Decomposition of Hydroxylamine Hydrochloride and *N*-methyl Hydroxylamine Hydrochloride

YAN Jiao-jiao, CHEN Li-ping, CHEN Wang-hua, Lü Jia-yu,
LI Han, CHEN Ying-ying

Chinese Journal of Energetic Materials, 2015, 23(11): 1140–1146

DSC and ARC were used to test whether hydroxylamine hydrochloride (HH) and *N*-methyl hydroxylamine hydrochloride (NMHH) are of autocatalysis characteristic.

Treatment of the Waste Solvents from CL-20 Recrystallization

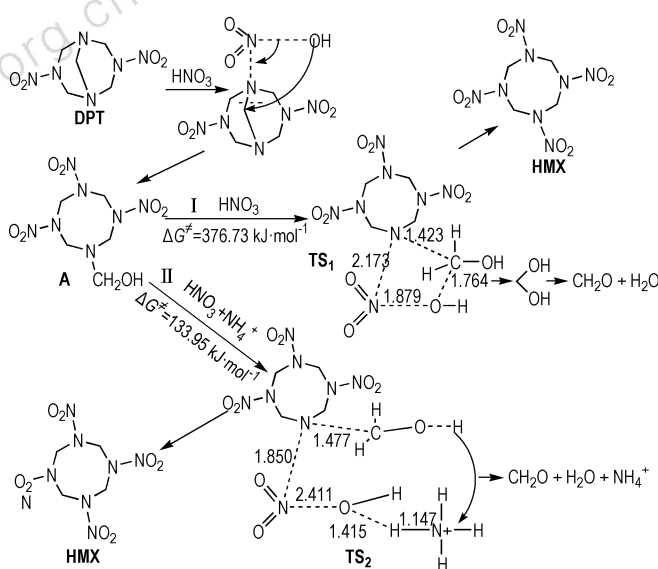


MA Ru-yi, YIN Hong-quan, ZHANG Yan-wen, LI Ming,
LIU Chun-zhu, WU Yu-kai

Chinese Journal of Energetic Materials, 2015, 23(11): 1147–1150

The waste solvents from CL-20 recrystallization process was pretreated by hydrocarbon oil and *n*-octanol. The component of waste solvents and precipitated solid were characterized by HPLC, FTIR and SEM.

Influence of Ammonium Ion on Nitrolysis of 3, 7-Dinitro-1, 3, 5, 7-tetraazabicyclo[3, 3, 1]nonane (DPT)



HUANG Xiao-chuan, YU Tao, QIU Shao-jun, GUO Tao,
TANG Wang, GE Zhong-xue, MENG Zi-hui, XU Zhi-bin

Chinese Journal of Energetic Materials, 2015, 23(11): 1151–1154

Executive editor: ZHANG Qi WANG Yan-xiu JIANG Mei