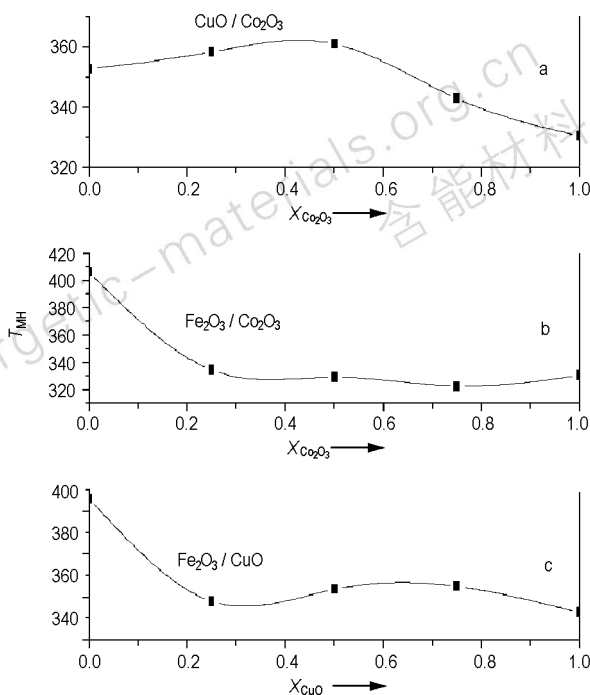


Effect of Superfine Composite Transition Metal Oxide on Thermal Decomposition of Ammonium Perchlorate



The catalytic behavior of transition metal oxides (TMOs) depends on the combination and suitable mixing proportion of TMOs. From the curves of the temperature change of the higher exothermic peak of ammonium perchlorate decomposition with the content of one of the composite TMOs, the optimum combination can be found quickly.

CHEN Ai-si, LI Feng-sheng, MA Zhen-ye, HUANG Min
Hanneng Cailiao, 2004, 12(6) : 321

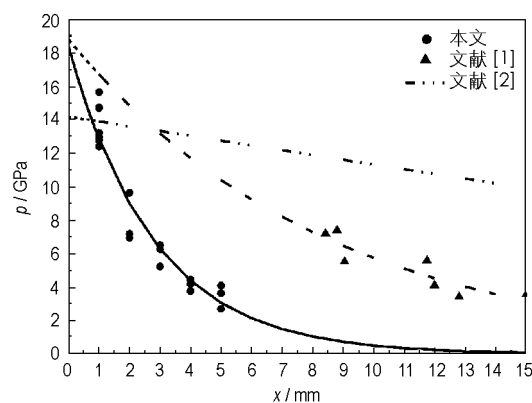
Control of Crystallization Process for Potassium Picrate

WANG Zhi-xin, LI Guo-xin, LAO Yun-liang,
JIAO Qing-jie, ZHOU Bao-qing
Hanneng Cailiao, 2004, 12(6) : 326

The refinement of picric acid and the adoption of crystal modifiers are the two key factors for the modified potassium picrate (KP). The optimized technology condition for the control of KP crystallization through orthogonal experiments are determined.

Study on Attenuation of Detonator Shock Wave in PMMA

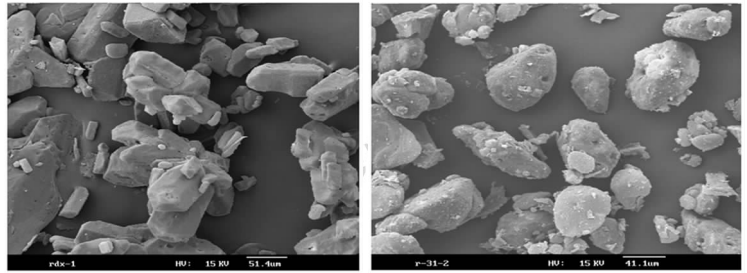
HAN Xiu-feng, CAI Rui-jiao, YAN Nan
Hanneng Cailiao, 2004, 12(6) : 329



The attenuation coefficient of shock wave in PMMA is different because of charge diameter. The absolute value of attenuation coefficient is inverse proportional to the charge diameter.

Effects of Coating Methods on PBX-RDX Impact Sensitivity

LU Ming, SUN Jie, CHEN Yu, LUO Yun-jun, TAN Hui-min
Hanneng Cailiao, 2004, 12(6) : 333



The RDX was coated with waterborne polyurethane (WPU) latex by methods of depositing WPU Latex through adding 10% alum solution and latex polymerization. The coated RDX samples were evaluated by means of SEM and impact sensitivity test.

Comparative Study on Mechanical Properties of Two Kinds of JOB-9003 Shaped Separately by Isostatic Liquid Pressing and Mould Pressing

WEN Mao-ping, PANG Hai-yan, JING Shi-ming,
LAN Lin-gang
Hanneng Cailiao, 2004, 12(6) : 338

At 20 °C the mechanical properties of two kinds explosive of JOB-9003 shaped by technology formation of isostatic liquid and mould pressing are all most the same, but from 35 °C to 55 °C the mechanical properties of isostatic liquid pressing JOB-9003 is higher than that of mould pressing JOB-9003 obviously.

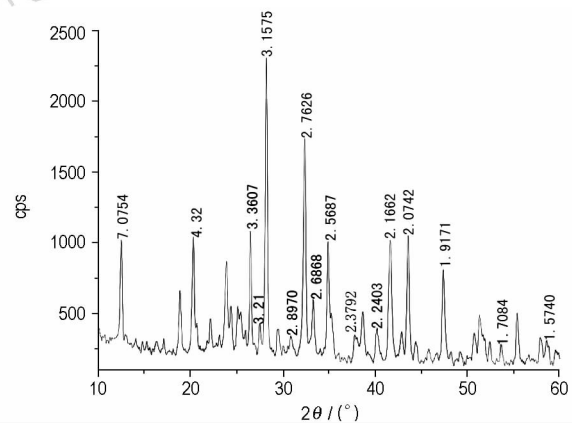
Calculation Study on Ignition of Boron Particle of Ducted Rocket Secondary Chamber

HU Jian-xin, XIA Zhi-xun, LUO Zhen-bing,
MIAO Wang-bo, GUO Jian, ZHAO Jian-min
Hanneng Cailiao, 2004, 12(6) : 342

This paper addresses the ignition of boron particles in ducted rocket secondary chamber. Effects of various parameters on particle ignition of were studied with the model developed by King. These parameters include initial oxide thickness, initial particle size, ambient temperature, pressure, and oxygen mole fraction.

Composition Analysis on Deterioration of Electric Match Charge in Storage

TU Xiao-zhen, YAN Nan, HUA Qi, LI Ping-xuan
Hanneng Cailiao, 2004, 12(6) : 346



The change of the electric match composition was analysed by X-ray diffraction test. The electric matches were processed under high temperature and high humidity accelerating life test to simulate the natural storage condition.

Preparation and Characterization of Ultrafine HMX Particles

YANG Guang-cheng, NIE Fu-de

Hanneng Cailiao, 2004, 12(6): 350

$$\frac{SMD}{L} = \left[1 + \frac{1}{ALR} \right]^x \left[A \left(\frac{\sigma_L}{\rho_A U_R^2 L} \right)^a + B \left(\frac{\mu_L^2}{\sigma_L \rho_L L} \right)^b \right]$$

The equation shows the effect of flow rate of HMX resolution and air on the size distributions of ultrafine HMX particles that prepared by spray drying method. Data of particles identified by XRD, SEM and TG-DSC were presented.

Effect of Chemical Composition of Wastewater on the TNT Degradation with O₃/H₂O₂

WU Yao-guo, ZHAO Chen-hui, HUI Lin, ZHAO Da-wei

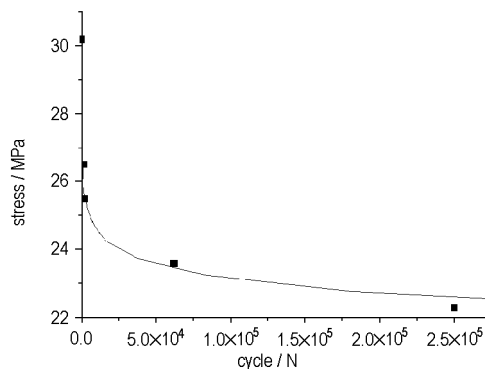
Hanneng Cailiao, 2004, 12(6): 353

In order to assess the effects of chemicals on the TNT degradation with O₃/H₂O₂, the experiments were carried out with HCO₃⁻, NO₃⁻, SO₄⁻, HCOO⁻, Cu²⁺ and Al³⁺. The results show that HCO₃⁻, HCOO⁻ and Cu²⁺ can suppress the TNT degradation with O₃/H₂O₂, and the effects of NO₃⁻, SO₄⁻ on TNT degradation with O₃/H₂O₂ were not found.

Experimental Study on Compressive Fatigue of PBX

LAN Lin-gang, HAO Ying, WEN Mao-ping, PANG Hai-yan

Hanneng Cailiao, 2004, 12(6): 358



Experimental study on compressive fatigue of PBX was introduced and S-N curve of JB-9014 explosive was obtained.

Thermal Decomposition Kinetics of Mixture of AN and NaNO₃

GUO Zi-ru, WANG Xiao-hong

Hanneng Cailiao, 2004, 12(6): 361

The kinetics of the thermal decomposition reaction of analytically pure ammonium nitrate (AN), commercially pure AN and mixture of analytically pure AN and NaNO₃ has been investigated by means of non-isothermal DSC and TG at various heating rates of 2, 4, 6, 8 K/min.

Determination of Sensitivity of Plastic Explosive Containing Insensitive Explosives

Andraej Oraechowski, Andrzej Maranda,

Dorota Powala, Jacek Bordowski

Hanneng Cailiao, 2004, 12(6): 364

RDX, HMX with binder — Impact, friction sensitivity is high
RDX, HMX with binder NTO or NGU — Impact, friction sensitivity decreased

**Study on Environmental Friendly Composition
for Green Flare**

TANG Gui-lin, DU Zhi-ming, ZHAO Jia-yu,
SONG Zhi-min, LI Min
Hanneng Cailiao, 2004, 12(6) : 368

A green flare composition is obtained by using copper oxide as oxidant and color substance, the organism as combustible. The composition eliminated the pollution caused by barium salt and decreased the inhalable particulates.

**Research and Development of Insensitive Solid
Propellants**

ZHANG Qiong-fang, ZHANG Jiao-qiang
Hanneng Cailiao, 2004, 12(6) : 371

Several methods of developing insensitive propellants are described. The insensitive properties of HTPE propellants, HTPB propellants, and NEPE propellants etc are introduced.

Progress in Gas Generating Pyrotechnic Composition

WANG Hong-she, DU Zhi-ming
Hanneng Cailiao, 2004, 12(6) : 376

The synthesis and properties of some nitrogen-rich compounds with high nitrogen content, good thermal stability and high formation enthalpy on the basis of tetrazole and tetrazine structures are reviewed.

**Review on Non-explosive and Irrestorable Ammonium
Nitrate**

SHEN Li-jin, WANG Xu-guang
Hanneng Cailiao, 2004, 12(6) : 381

The criteria for an ideal desensitizing AN and thermal decomposition mechanism of AN are introduced, and some viewpoints on the selection of desensitizing additives and testing for detonability of desensitized AN mixtures are presented.

Executive editor: JIANG Mei; Computer typesetter: ZHANG Gui-hong
