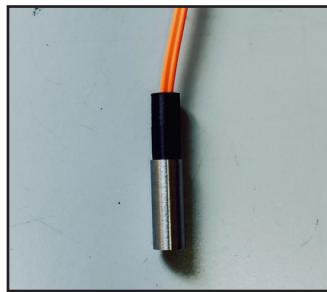


NanoPyro developed a new type of lead- and heavy metal-free electric detonator based on activated carbon and perchlorate salt as primary charge. With an optimized primary charge of 260mg, we are able to effectively detonate PETN and reach similar dimension as commercially available detonators. This innovant carbon and perchlorate based primer displays 10 times reduced sensitivities to external stimuli and excellent thermal stability compared to classical

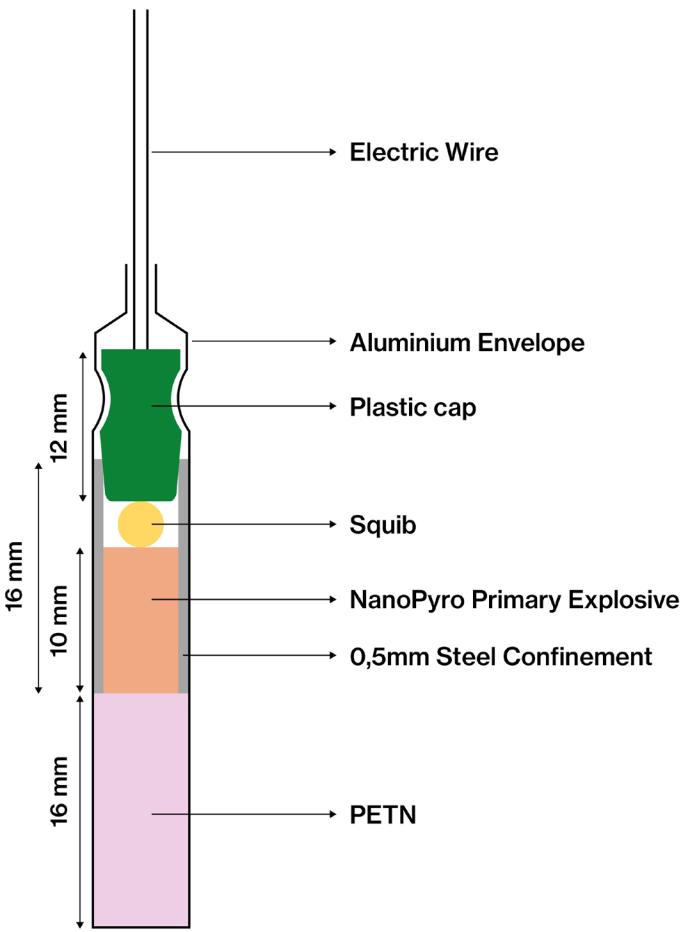
primary explosive such as lead azide (LA), being therefore comparable to secondary explosives. This reduced sensitivity allows to significantly decrease the production costs. Our new primary explosive displays comparable initiation capability and performances as LA. The straightforward synthesis only requires water, does not produce any waste, and the supply chain is inherently resilient.

INSIDE PART

Primary explosive
pressed in steel
container



FINAL DETONATOR



Primary Explosive Characteristics

Mass (g)	0.260
Density (g/cm³)	1.30
VOD (m/s)	3600
Ignition Temp (°C)	350

Sensitivity Comparison with Lead Azide

	NanoPyro	LA
Friction (N)*	120-160	10
Impact (J)**	25	2
ESD (mJ)	>50	5

*STANAG 4489

**STANAG 4487

