

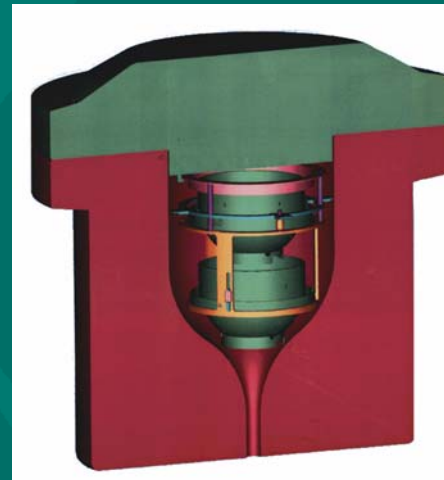


Manufacturing Issues with Nitrocellulose Based Explosives

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Use

- Nitrocellulose is good for making gels with energetic organic plasticizers, for use in high explosives formulations requiring optimum performance and safety
- Long chain length gives good mechanical properties



What's Needed

- Stability
- High viscosity
- Energy
- Mechanical strength
- Intra & inter batch uniformity
- Security of supply

Issues

- Research based on a limited number of grades
- Uncertain security of existing grades
- Lack of uniformity of natural raw materials

Way forward

- Identification of alternative grades
- Protect and stockpile materials
- Collaboration to protect supply continuity and uniformity
- Investigate synthetic materials
 - Raw materials
 - Final products
- Influence manufacturing routes
 - Grades tailored to requirements