Double Base Powders
SAFETY DATA SHEET
January 2017

The following smokeless powders are distributed by IMR Legendary Powders

IMR Blue®
IMR Green®
IMR Red®
IMR UnEqual®
# Material Safety Data Sheet

General Dynamics Ordnance and Tactical Systems–Canada Valleyfield Inc.  
55, rue Masson  
Valleyfield (Québec)  
Canada J6S 4V9  

## SECTION I - PRODUCT IDENTIFICATION

<table>
<thead>
<tr>
<th>Product name</th>
<th>HS, SS, RF (all types) – Double base, propellant powder</th>
</tr>
</thead>
</table>
| WHIMS classification              | Division: not controlled  
|                                   | Subdivision: not controlled                            |
| Chemical formula                  | N/AP                                                  |
| Product use                       | Gun propellant                                       |
| CAS number                        | N/AP                                                  |
| MSDS number                       | 16K006                                                |

## SECTION II - PHYSICAL/CHEMICAL DATA

<table>
<thead>
<tr>
<th>Physical state and appearance</th>
<th>Black granular solid.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular weight</td>
<td>N/AP</td>
</tr>
<tr>
<td>Vapour density (air = 1)</td>
<td>N/AV</td>
</tr>
<tr>
<td>Boiling point (°C)</td>
<td>N/AP</td>
</tr>
<tr>
<td>Odour</td>
<td>N/AV</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>N/AV</td>
</tr>
<tr>
<td>Evaporation</td>
<td>N/AP</td>
</tr>
<tr>
<td>Freezing point (°C)</td>
<td>N/AV</td>
</tr>
<tr>
<td>pH</td>
<td>N/AV</td>
</tr>
<tr>
<td>Coefficient of water / oil</td>
<td>N/AV</td>
</tr>
<tr>
<td>distribution</td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>1.6 g/cm³</td>
</tr>
<tr>
<td>Solubility in water (20°C)</td>
<td>N/AP</td>
</tr>
</tbody>
</table>
SECTION III - COMPOSITION

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>% wt</th>
<th>TWA</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrocellulose</td>
<td>50 – 90</td>
<td>None</td>
<td>9004-70-0</td>
</tr>
<tr>
<td>Nitroglycerine</td>
<td>5 – 40</td>
<td>2 mg/m³</td>
<td>55-63-0</td>
</tr>
<tr>
<td>Potassium sulphate</td>
<td>0.5</td>
<td>N/AV</td>
<td>7778-80-5</td>
</tr>
<tr>
<td>Graphite</td>
<td>0.4</td>
<td>10 mg/m³</td>
<td>7782-42-5</td>
</tr>
<tr>
<td>Ethyl Centralite</td>
<td>1 – 2</td>
<td></td>
<td>85-98-3</td>
</tr>
</tbody>
</table>

SECTION IV - FIRE AND EXPLOSION INFORMATION

Flash point (°C) : N/AP
Autoignition temperature (°C) : 170°C
Upper flammable limit (volume %) : N/AV
Lower flammable limit (volume %) : N/AV
Flammability ? : YES ☒ NO ☐
If yes, under what conditions ? : Heat, open flame, static discharge and impact.
Means of extinction : Evacuate immediately. Do not fight fire.
Special procedures :
Hazardous combustion products : Carbon oxides (CO, CO₂) and Nitrogen (NOx).
Explosion data :
Sensitivity to mechanical impact or to static discharge :

SECTION V – REACTIVITY DATA

Chemical stability : YES ☐ NO ☒
If no, under what conditions ? : Heat, open flame and sparks.
Incompatibility to other substances ? : YES ☒ NO ☐
If so, which ones ? : Strong alkalis, strong acids and ignition sources.
Reactivity and under what conditions : N/AP
Hazardous decomposition products : Nitrogen oxides (NOx).
**SECTION VI – HEALTH HAZARD DATA**

**Route of entry:**
- Skin absorption
- Inhalation
- Ingestion
- Skin contact
- Eye contact

**Exposure limits (TWA):**

**Irritancy (product):**
- Is irritating to the eyes and to the respiratory tract.

**Sensitization to product:**
- N/AV

**Cancerogenicity:**
- N/AV

**Teratogenicity:**
- N/AV

**Reproductive effects:**
- N/AV

**Synergistic materials:**
- N/AV

**Mutagenicity:**
- N/AV

**Effects of acute exposure to product:**
- Irritation of the eyes and the upper respiratory tract (nose and throat), followed by coughing.

**Effects of chronic exposure to product:**
- N/AV

**Toxicological data:**

<table>
<thead>
<tr>
<th>Products</th>
<th>Species</th>
<th>DL50 oral</th>
<th>DL50 skin</th>
<th>CL50 inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitroglycérine</td>
<td>Rat</td>
<td>80 mg/kg</td>
<td>N/AV</td>
<td>N/AV</td>
</tr>
</tbody>
</table>
## SECTION VII – PREVENTIVE MEASURE

### PERSONAL PROTECTIVE EQUIPMENT

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gloves and clothing</td>
<td>Cotton or nitrile gloves and protective clothing. Change frequently.</td>
</tr>
<tr>
<td>Eye protection</td>
<td>Safety glasses with lateral protection.</td>
</tr>
<tr>
<td>Footwear</td>
<td>Anti-static conductive shoes.</td>
</tr>
<tr>
<td>Other</td>
<td>Safety shower and safety eye shower could be available.</td>
</tr>
<tr>
<td>Respiratory protection</td>
<td>If ventilation is insufficient, wear a dust mask or a cartridge respirator.</td>
</tr>
<tr>
<td>Engineering controls</td>
<td>N/AV</td>
</tr>
<tr>
<td>Handling procedures and</td>
<td>Explosive, will ignite if exposed to sudden heat.</td>
</tr>
<tr>
<td>equipment</td>
<td></td>
</tr>
<tr>
<td>Storage requirements</td>
<td>Store away from source of ignition and heat.</td>
</tr>
</tbody>
</table>

### Special shipping information:

- **Hazard Class**: 1.3C
- **UN number**: UN 0161
- **Shipping name**: Powder, smokeless
- **Subsidiary risk**: Ø
- **Packing group**: II

### Special shipping information: (Equivalency certificate)

- **Hazard Class**: 4.1
- **UN number**: UN 3178
- **Shipping name**: Flammable solid inorganic NOS (small arms propellant)
- **Subsidiary risk**: Ø
- **Packing group**: II
SECTION VIII – FIRST AID MEASURES

Skin: Wash contaminated area with soap and water.
Eye: Keeping eyes open, rinse immediately with running water for at least 15 minutes.
Inhalation: Move victim to fresh air. If victim is not breathing give CPR. Give oxygen, keep victim warm and get medical help.
Ingestion: Consult a physician.
Other and advice to doctor: N/AV

SECTION IX – ENVIRONMENTAL PROTECTION INFORMATION

Environmental effects: N/AV
Deactivating chemicals: N/AV
Steps to be taken in the event of a spill or a leak: Be sure to wet powder thoroughly before picking up with conventional methods.
Waste disposal: Incinerate at an approved site.

SECTION X – PREPARATION INFORMATION

Prepared by: General Dynamics Ordnance and Tactical Systems–Canada Valleyfield Inc.
Telephone number: 450-371-5520
Fax number: 450-377-7873
Date: September, 2016

To the best of our knowledge, the information contained in this document is exact. However, neither the above-mentioned supplier nor any of his branches can assume responsibility regarding the exactitude of the information contained in this document. The final determination of the suitability of any material or product is the exclusive responsibility of the user.

Legend:

N/AP: Non applicable
N/AV: Not available
CAS: Chemical Abstract Service
TWA: Time Wait Average
WHIMS: Workplace Hazardous Materials Information System