



Double Base Powders - Enduron®

SAFETY DATA SHEET

June 2017

The following smokeless powders
are distributed by
IMR Legendary Powders

IMR 4166

IMR 4451

IMR 4955

IMR 7977

IMR 8133

1.4C EX Approval= (EX-2016090561)

Material Safety Data Sheet

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

Emergency phone number
24 hours : 1-888-922-3330
Emergency Response Plan ERP2-1693

SECTION I - PRODUCT IDENTIFICATION

Product name : XPR40C2 – CMR-170
WHIMS classification :
Division : not controlled
Subdivision : not controlled
GD Part number : XPR40C2
Chemical formula : N/AP
Product use : Double base propellant powder
CAS number : N/AP
MSDS number : 13F302

SECTION II - PHYSICAL / CHEMICAL DATA

Physical state and appearance : Black granular solid
Molecular weight : N/AP
Vapour density (air = 1) : N/AV
Boiling point (°C) : N/AP
Odour : N/AV
Vapour pressure : N/AV
Evaporation : N/AP
Melting point (°C) : Decomposes
pH : N/AV
Coefficient of water / oil distribution : N/AV
Density : 1.60 g/cm³ SS
Solubility in water (20°C) : N/AP

SECTION III - COMPOSITION

| <u>Ingredients</u> | <u>% wt</u> | <u>TWA</u> | <u>CAS number</u> |
|--------------------|-------------|----------------------|-------------------|
| Nitrocellulose | 66 - 94 | None | 9004-70-0 |
| Nitroglycerine | 1.0 - 15.0 | 2 mg/m ³ | 55-63-0 |
| Potassium sulphate | 0.0 - 2.0 | N/AV | 7778-80-5 |
| Graphite | 0.0 - 0.5 | 10 mg/m ³ | 7782-42-5 |
| Ethyl Centralite | 0.5 - 2.0 | | 85-98-3 |
| Methyl Centralite | 6.0 max | N/AV | 611-92-7 |

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 <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| If yes, under what conditions ? : | Heat, open flame, static discharge and impact. |
| Means of extinction : | Water can be used from a distance. |
| Special procedures : | Evacuate immediately. Do not fight fire. |
| Hazardous combustion products : | Carbon oxides (CO, CO ₂) and Nitrogen (NO _x). |
| Explosion data : | This product is explosive and will ignite at high temperature, with an open flame or with a spark. |
| Sensitivity to mechanical impact or to static discharge : | Sensitive to static discharge and impact. |

SECTION V - REACTIVITY DATA

| | |
|---|---|
| Chemical stability : | YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> |
| If no, under what conditions ? : | Heat, open flame and sparks. |
| Incompatibility to other substances ? : | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| If so, which ones ? : | Strong alkalis, strong acids and ignition sources. |
| Reactivity and under what conditions : | N/AP |
| Hazardous decomposition products : | Nitrogen oxides (NO _x). |

SECTION VI - HEALTH HAZARD DATA

Route of entry :

| | |
|-----------------|-------------------------------------|
| Skin absorption | <input checked="" type="checkbox"/> |
| Inhalation | <input checked="" type="checkbox"/> |
| Ingestion | <input checked="" type="checkbox"/> |
| Skin contact | <input checked="" type="checkbox"/> |
| Eye contact | <input type="checkbox"/> |

Exposure limits (TWA) :

N/AP

Irritancy (product) :

Is irritating to the eyes and to the respiratory tract.

Sensitization to product :

N/AV

Carcinogenicity :

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 :

| Products | Species | DL50 oral | DL50 skin | CL50 inhalation |
|----------------|---------|--------------|--------------|-----------------|
| Nitroglycerine | Rat | 80 mg/kg | N/AV | N/AV |
| Dinitrotoluene | Rat | 278 mg/kg | N/AV | N/AV |
| Diphenymaline | Rat | > 1500 mg/kg | N/AV | N/AV |
| Diphenymaline | Rabbit | N/AV | > 5000 mg/kg | N/AV |

SECTION VII - PREVENTIVE MEASURE

PERSONAL PROTECTIVE EQUIPMENT

| | |
|-------------------------------------|---|
| Gloves and clothing : | Cotton gloves and clothing (anti-static). Change frequently. |
| Eye protection : | Safety glasses with lateral protection. |
| Footwear : | Anti-static conductive shoes. |
| Other : | Safety shower and safety eye shower could be available. |
| Respiratory protection : | If ventilation is insufficient, wear a dust mask or a cartridge respirator. |
| Engineering controls : | N/AV |
| Handling procedures and equipment : | Explosives, will ignite if exposed to sudden heat. |
| Storage requirements : | Store away from source of ignition and heat. |

Special shipping information :

| | |
|-------------------|--|
| Hazard Class : | 1.3C |
| UN number : | UN 0161 |
| Shipping name : | Powder smokeless |
| EX number : | 2009080483 (XPR40C2) 2007070017 (CMR-170) |
| 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) |
| EX number : | 2009080483 (XPR40C2) 2007070017 (CMR-170) |
| 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 : | June, 2013 |

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 |