



Single Base Powders  
**SAFETY DATA SHEET**  
June 2017

The following smokeless powders  
are distributed by  
IMR Legendary Powders

IMR 3031<sup>TM</sup> **(EX-2016090516)**  
IMR 4007SSC<sup>TM</sup> (NO 1.4C)  
IMR 4064<sup>®</sup> **(EX-2016090516)**  
IMR 4198<sup>TM</sup> **(EX-2016090516)**  
IMR4227<sup>TM</sup> **(EX-2016090516)**  
IMR 4320<sup>TM</sup> **(EX-2016090516)**  
IMR 4350<sup>TM</sup> **(EX-2016090516)**  
SR4756<sup>TM</sup> (NO 1.4C)  
SR4759<sup>TM</sup> (NO 1.4C)  
IMR 4831<sup>TM</sup> **(EX-2016090516)**  
IMR 4895<sup>TM</sup> **(EX-2016090516)**  
SR7625<sup>®</sup> (NO 1.4C)  
IMR 7828<sup>TM</sup> **(EX-2016090516)**  
PB<sup>TM</sup> (NO 1.4C)  
IMR 7828SSC<sup>TM</sup> **(EX-2016090516)**

***1.4C EX Approvals in bold parenthesis***

# Material Safety Data Sheet

General Dynamics Ordnance and Tactical  
Systems–Canada Valleyfield Inc.

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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 : IMR, CF & XPR28SSC (all types) Single base smokeless powder  
WHIMS classification :  
Division : not controlled  
Subdivision : not controlled  
GD Part number : 502-503-504-505-506-507-508-510-511-512-513-535-537-549-553-612.770  
Chemical formula : N/AP  
Product use : Gun propellant  
CAS number : N/AP  
MSDS number : 14F328  
« NATO stock number » : N/AP

## SECTION II - PHYSICAL / CHEMICAL DATA

Physical state and appearance : Black granular solid.  
Molecular weight : N/AP  
Vapour density (air = 1) : N/AP  
Boiling point (°C) : N/AP  
Odour : N/AV  
Vapour pressure : N/AP  
Evaporation : N/AP  
Freezing point (°C) : N/AP  
pH : N/AV  
Coefficient of water / oil distribution : N/AV  
Density : 1.6g/cm<sup>3</sup>  
Solubility in water (20°C) : N/AP

### SECTION III - COMPOSITION

<u>Ingredients</u>	<u>% wt</u>	<u>TWA</u>	<u>CAS number</u>
Nitrocellulose	80 - 100	None	9004-70-0
Diphenylamine	1 - 2	10 mg/m3	122-39-4
Dinitrotoluene	4-12	1.5 mg/m3	121-14-2
Potassium sulphate	0.5	N/AV	7778-80-5
Graphite	<1	10 mg/m3	7782-42-5

### SECTION IV - FIRE AND EXPLOSION INFORMATION

Flash point (°C) :	N/AP
Autoignition temperature (°C) :	170° C (approx.)
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 :	Do not fight fire.
Hazardous combustion products :	Nitrogen and carbon oxides (NOx and COx).
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 type="checkbox"/> NO <input checked="" 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.

## SECTION VI - HEALTH HAZARD DATA

Route of entry :

Skin absorption	<input 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) :

<b>Graphite</b>	<b>Dinitrotoluene</b>
10 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>

Irritancy (product) :

Is irritating to the eyes and 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:

These products were not tested for the toxicity. They are explosives of class B and ardent, stuffy or not, can cause physical injury, including the death.

Effects of chronic exposure to product :

N/AV

Toxicological data :

Products	Species	DL50 oral	DL50 skin	CL50 inhalation
Dinitrotoluene	Rat	278 mg/kg	N/AV	N/AV
Diphenylamine	Rat	>1500 mg/kg	N/AV	N/AV
Diphenylamine	Rabbit	N/AV	>5000 mg/kg	N/AV

## SECTION VII - PREVENTIVE MEASURE

### PERSONAL PROTECTIVE EQUIPMENT

Gloves and clothing :	Cotton or nitril gloves and protective clothing. 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 :	Explosive, will ignite if exposed to sudden heat.
Storage requirements :	Store away from source of ignition and heat.
Shipping information :	
	Hazard Class : 1.3C
	UN number : UN 0161
	Shipping name : Powder smokeless
	EX number : 1990030214-215-216-217-218-219-220-221-222-223-224-225-226-227, 1997080014, 1990060052, 1990080091, 2004090157
	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, 2014

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 Weighted Average  
WHIMS : Workplace Hazardous Materials Information System