



Single Base Powders  
**MATERIAL SAFETY DATA SHEET**  
April 2009

The following smokeless powders  
are distributed by  
IMR Legendary Powders

IMR 3031<sup>TM</sup>  
IMR 4007SSC<sup>TM</sup>  
IMR 4064<sup>®</sup>  
IMR 4198<sup>TM</sup> - Canada  
IMR4227<sup>TM</sup> - Canada  
IMR 4320<sup>TM</sup>  
IMR 4350<sup>TM</sup>  
SR4756<sup>TM</sup>  
SR4759<sup>TM</sup>  
IMR 4831<sup>TM</sup>  
IMR 4895<sup>TM</sup>  
SR7625<sup>®</sup>  
IMR 7828<sup>TM</sup>  
PB<sup>TM</sup>  
IMR 7828SSC<sup>TM</sup>

**GENERAL DYNAMICS**

Produits de défense et Systèmes tactiques--Canada Valleyfield

**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 : IMR &amp; CF (all types) Single base smokeless powder

WHIMS classification :

Division : not controlled

Subdivision :

GD Part number : 502-503-504-505-506-507-508-510-511-512-535-537-549-553-612.770

Chemical formula : N/AP

Product use : Gun propellant

CAS number : N/AP

MSDS number : 08D114

**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 threshold : N/AV

Vapour pressure : N/AP

Evaporation : N/AP

Freezing point (°C) : N/AP

pH : N/AV

Coefficient of water / oil  
distribution : N/AVDensity : 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 sulfate	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 :	<b><u>EVACUATE IMMEDIATELY.</u></b> Do not fight fire.
Hazardous combustion products :	Nitrogen and carbon oxides (NO <sub>x</sub> and CO <sub>x</sub> ).
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 :	Dust is 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) :

Graphite	Dinitrotoluene
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:

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
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	1990030214-215-216-217-218-219-220-221-222-223-224-225-226-227-230, 1997080014, 1990060052, 1990080091
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.  
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**Date :** April, 2008

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### Legend :

**N/AP :** Non applicable  
**N/AV :** Not available  
**CAS :** Chemical Abstract Service  
**TWA :** Time weighted average  
**WHIMS :** Workplace hazardous materials information system