IMR®
LEGENDARY POWDERS

Single Base Powders

SAFETY DATA SHEET

February 2022

The following smokeless powders
are distributed by
IMR Legendary Powders

IMR 3031™ ***(EX-2016090516)***
IMR 4007SSC™ (**NO 1.4C**) [DISCONTINUED]
IMR 4064® ***(EX-2016090516)***
IMR 4198™ ***(EX-2016090516)***
IMR 4227™ ***(EX-2016090516)***
IMR 4320™ ***(EX-2016090516)***
IMR 4350™ ***(EX-2016090516)***
SR4756™ (**NO 1.4C**) [DISCONTINUED]
SR4759™ (**NO 1.4C**) [DISCONTINUED]
IMR 4831™ ***(EX-2016090516)***
IMR 4895™ ***(EX-2016090516)***
SR7625® (**NO 1.4C**) [DISCONTINUED]
IMR 7828™ ***(EX-2016090516)***
PB™ (**NO 1.4C**) [DISCONTINUED]
IMR 7828SSC™ ***(EX-2016090516)***

1.4C EX Approvals in bold parenthesis

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SAFETY DATA SHEET

Date: February, 2020

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name: IMR (all types), CF, and CMR-100
Synonyms: Simple base, smokeless powder
File: SDS-19C001

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product use: Gun propellant

1.3 Details of the supplier of the safety data sheet

Supplier: General Dynamics Ordonnance and Tactical Systems- Canada Valleyfield
55 rue Masson
Valleyfield (Quebec)
Canada J6S 4V9

1.4 Emergency phone number

Emergency phone number: 1-888-922-3330 (24 hours)

SECTION 2: HAZARDS IDENTIFCATION

2.1 Classification of the substance or mixture according to SIMDUT 2015

Explosive Division 1.3

Acute oral toxicity-Category 4

Specific target organ toxicity (single exposure) -Category 2

Specific target organ toxicity (repeated exposure) -Category 1

Carcinogenicity-Category 1A

Germ cell mutation-Category 2

Physical Hazards: Explosives

Product is a mixture. Health hazards are based on published data for individual ingredients of the mixture. Product as a whole has not been tested for health hazards.

2.2 Label elements according to Regulation SIMDUT 2015

Pictogram:

Signal word: DANGER

Hazard Statements:

H203 – Explosive; fire, blast or projection hazard

H302 – Harmful if swallowed

H341 – Suspected of causing genetic defects

H350 – May cause cancer

H371 – May cause damage to organs

H372 – Causes damage to organs through prolonged or repeated exposure

Precautionary Statements:

P201 – Obtain special instructions before use.

P202 – Do not handle until all safety precautions have been read and understood.

P210 – Keep away from heat, hot surfaces, sparks, open flame and other ignition sources. No smoking.

P234 – Keep only in original container.

P250 – Do not subject to grinding/shock/.../friction

P264 – Wash your hands thoroughly after handling.

P270 – Do not eat, drink or smoke when using this product.

P272 – Contaminated work clothing should not be allowed out of the workplace.

P280 – Wear protective gloves/protective clothing/eye protection/face protection

P314 – Get medical advice/attention if you feel unwell.

P405 – Store locked up.

P501 – Dispose of contents in accordance with local/ regional/ national/ international regulation.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical name	CAS number	% wt CF, CMR-100, IMR (all types)	Classification of the substance
Nitrocellulose	9004-70-0	80-100	Expl. 1.1 Flammable solid

Diphenylamine	122-39-4	0.5-1.5	Acute toxicity, Oral route-Category 4 Specific target organ toxicity - single exposure - Category 2 Specific target organ toxicity - repeated exposure - Category 1
Potassium sulfate	7778-80-5	0.5-1.5	This product is not a hazardous product according to RPD classification criteria
Graphite	7782-42-5	0.1-1	Carcinogenicity - Category 1A Specific target organ toxicity - repeated exposure - Category 1
Dinitrotoluene	121-14-2	5-10	Germ cell mutagenicity - Category 2 Carcinogenicity - Category 2

The actual concentration range is withheld as a trade secret.

SECTION 4: FIRST AIDS MEASURE

4.1 Description of first aid measures

Inhalation — Move victim to fresh air. If breathing is difficult, ensure airway is clear, give oxygen and continue monitoring. If victim is not breathing give CPR. Keep victim warm and get medical help.

Skin contact — Wash contaminated area with soap and water

Eye contact — Keeping eyes open, rinse immediately with running water for at least 15 minutes. If eye irritation persists: Get medical advice/attention.

Ingestion — Call a POISON CENTER or doctor if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

May cause cancer after exposure. Specific target organ toxicity (single exposure) category 2 and specific target organ toxicity (repeated exposure) category 1 which may cause various health problems. Suspected of causing genetic defects

4.3 Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim under observation.

SECTION 5: FIRE-FIGTHING MEASURES

5.1 Extinguishing media

Large volumes of water should be applied as quickly possible from automatic sprinklers or fire hose.

Do not use water jet as an extinguisher, as this may spread fire.

5.2 Special hazards arising from the substance or mixture

Toxic vapors/gases may be formed during a fire. Combustion products vary depending on fire conditions and other combustibles present. The predominant product will be nitrogen oxide.

5.3 Advice for firefighters

Special protective equipment and precautions for firefighters	Self-contained breathing apparatus (SCBA) and full protective clothing must be worn in case of fire. This includes, but is not limited to, impervious boots, gloves, hard hat and chemically impermeable suit.
Fire-fighting equipment/instructions	Fire involving smokeless propellant should NOT be fought unless extinguishing media can be applied from a well-protected (e.g. behind a berm or barricade) and distant location from the point of fire. Small quantities of propellant may be encountered in distribution or ammunition manufacturing, and should be evaluated in the context of applicable fire codes.
Specific methods	Do not firefight; evacuate personnel immediately and consider the hazards of other involve materials.
General fire hazards	Explosive; fire blast and projection hazard

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precaution, protective equipment and emergency procedures

Keep unnecessary personnel away. Eliminate all ignition sources. Use only non-sparking tools. Wear appropriate protective equipment and non-flammable or flame retardant clothing during clean-up. Avoid inhalation of dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fumes at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing

appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of this SDS.

6.2 Environmental precaution

Avoid discharge into drains, water courses or onto ground.

6.3 Methods and material for containment and cleaning up

Avoid dispersal of dust in the air (e.g. clearing dust surface with compressed air). Clean up spills immediately using non-sparking tools. Wet down spilled materials prior to initiating clean-up and keep material wet until ready for disposal. Avoid contamination of water bodies during clean up and disposal. This material is heavier than water. Create and overflow dam with filtration capabilities to retain material. Collect dust using a vacuum cleaner equipped with HEPA filter.

6.4 Reference to other sections

For waste disposal, see section 13 of this SDS

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Do not handle until all safety precaution have been read and understood. Do not subject to mechanical shock, Avoid exposure to sunlight or artificial ultraviolet light. Minimize dust generation and accumulation. Provide appropriate exhaust ventilation. Avoid breathing dust. Avoid contact with eyes, skin and clothing.

Do not taste or swallow. Wear appropriate personal protective equipment.

7.2 Conditions for safe storage, including any incompatibilities

Store in original container. Keep container tightly closed. Store in cool, dry, well-ventilated place away from all sources of ignition and heat. Store away from incompatible material (see section 10 of this SDS)

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure Limits

Chemical name	CAS number	Limit value CAN	Limit value US
Nitrocellulose	9004-70-0	Not available	Not available
Diphenylamine	122-39-4	10 mg/m^3	10 mg/m^3
Potassium sulfate	7778-80-5	Not available	Not available
Graphite	7782-42-5	2 mg/m^3	2.5 mg/m^3

Dinitrotoluene	121-14-2	Not available	Not available

Database source http://limitvalue.ifa.dguv.de/

Biological limit values

No biological exposure limits noted for the ingredients

8.2 Exposure controls

Engineering measures	Local exhaust ventilation is recommended if significant dusting occurs. Otherwise, use general exhaust ventilation. Eye wash fountain and emergency showers are recommended.
Eye/face protection	Wear safety glasses with side shields or goggles.
Skin protection	Wear appropriate chemical resistant, flame retardant clothing. Change frequently
Hand protection	Nitrile gloves
Respiratory protection	If ventilation is insufficient, use a dust mask or cartridge respirator.
General hygiene consideration	Always observe good personal hygiene measure, such as washing after handling the material and before eating, drinking and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Black or yellow granular solid
Physical state	Solid
Form	Granular

Color	Black or yellow
Odor	Not applicable
pH	Not applicable
Melting point/freezing point	Not applicable
Initial boiling point/boiling range	Not applicable
Flash point	Not available
Evaporation rate	Not applicable
Flammability	Flammable solid
Upper/lower flammability or explosive limits	Not applicable
Vapor pressure	Not applicable
Vapor density	Not applicable
Relative density	1.6g/cm^3
Solubility(ies)	Not available
Partition coefficient	Not available
(n-octanol/water)	
Auto-ignition temperature	170◦C(338◦F)
Decomposition temperature	Not applicable
Viscosity	Not applicable

9.2 Other information

Product can explode if ignited and confined

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Can ignite due to mechanical shock and/or impact. Can ignite due to static discharge. Product can explode if ignited and confined.

10.2 Chemical stability

Unstable when exposed to sources of heat, sunlight or artificial ultraviolet light.

10.3 Possibility of hazardous reactions

Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid contact with incompatible materials. Direct sunlight, artificial ultraviolet light, flame and heat.

10.5 Incompatible materials

Strong acids and alkalis

10.6 Hazardous decomposition products

Nitrogen (NO_x) and carbon oxides (CO, CO_2)

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Products	Species	LC50	LD50 oral	LD50 dermal
Nitrocellulose	Rat	NA	5000 mg/kg	NA
Potassium sulfate	Rat	NA	NA	NA
Diphenylamine	NA	NA	NA	NA
Graphite	Rat	>64 mg/L	10000mg/kg	NA
Dinitrotoluene	NA	NA	NA	NA

Acute toxicity	Harmful if swallowed
Skin corrosion/irritation	Based on available data the classification criteria are not met.
Serious eye damage/irritation	Based on available data the classification criteria are not met.
Respiratory sensitization	Based on available data the classification criteria are not met.
Skin sensitization	Based on available data the classification criteria are not met.
Germ cell mutagenicity	May cause genetic mutation
Carcinogenicity	May cause a cancer
Reproductive toxicity	Based on available data the classification criteria are not met.

Specific target organ toxicity-single exposure	Specific target organ toxicity (single exposure) -Category 2
Specific target organ toxicity-repeated exposure	Specific target organ toxicity (repeated exposure) -Category 1
Aspiration hazard	Due to the physical form of the product it is not an aspiration hazard.
Chronic effects	Based on available data the classification criteria are not met.
Inhalation	Dust may irritate respiratory system.
Skin contact	May cause skin irritation.
Eyes contact	Cause eye irritation.
Ingestion	Acute toxicity

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxic to aquatic life with long lasting effects

12.2 Persistence and degradability

No data available on product mixture

12.3 Bio accumulative potential

No data available on product mixture

12.4 Mobility in soil

No data available on product mixture

12.5 Results of PBT and vPvB assessment

No data available on product mixture

12.6 Other adverse effects

No other adverse environmental effects known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

If material becomes a waste, it may be treated by controlled burning in small quantities if permissible by relevant regulatory agencies. Material should be spread into thin layers and ignited from a safe distance. Dispose of in accordance with applicable federal, state and local regulations. Do not discharge into drains, water courses or onto the ground.

Local disposal regulation

Dispose of in accordance with local regulations.

Waste from residues/unused products

Care must be taken to prevent environmental contamination from the use of this material. The user has the responsibility to dispose of unused material, residues and containers in compliance with all relevant laws and regulation.

Contaminated packaging

Emptied containers may contain explosive residues. Do not cut, drill, grind or weld on empty containers. Dispose of in accordance with applicable federal, state and local regulations.

SECTION 14: TRANSPORT INFORMATION

14.1 UN Number

UN0161

14.2 UN proper shipping name

Powder smokeless

14.3 Transport hazard class(es)

1.3C

14.4 Packing group

II

14.5 Environment hazards

Not available

14.6 Special precautions for user

Not available

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Not available

15.2 Chemical Safety Assessment

No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

Revision date : 2020-02-06

Revision No. : 1

General information:
This classification has been derived in accordance with SIMDUT 2015
Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

Acronyms and Abbreviations used:

CAS	Chemical Abstracts Service
CAN	Canada
EC	European Commission
EU	European Union
IBC	Intermediate Bulk Container
IMDG	International Maritime Dangerous Goods
MARPOL	International Convention for the Prevention of Pollution from Ships
PBT	Persistent, Bioaccumulative and Toxic substance
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
STOT	Specific Target Organ Toxicity
TWA	Time Weighted Average
US	United States
vPvB	Very Persistent and Very Bioaccumlative
%wt	Percentage weight

Disclaimer

The information in this Safety Data Sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. The information contained herein was written based on the best knowledge and experience currently available and is believed to be reliable and up to date as of the date of publication, but no warranty is expressed or implied. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and assume liability for loss, injury, damage or expense due to improper use.