Double Base Powders

SAFETY DATA SHEET

July 2018

The following smokeless powders are distributed by Hodgdon Powder Company.

Hi-Skor 700X™
Hi-Skor 800X™

1.4C EX Approval= (EX-2016090001)
SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier
Product Name: HS, SS, RF (all types)
Synonyms: Double base, propellant powder
File: SDS-18E001

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 IDENTIFICATION

2.1 Classification of the substance or mixture according to Regulation SIMDUT 2015
Explosive Division 1.3 (H203)
Acute oral toxicity-Category 3
Acute toxicity, dermal-Category 1B
Specific target organ toxicity (single exposure) -Category 1
Specific target organ toxicity (repeated exposure) -Category 1
Carcinogenicity-Category 1A
Oxidizing combustible-Category 3

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:
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Signal word: DANGER

Hazard Statements:
H203 - Explosive, fire, blast or projection hazard
H301 - Toxic if swallowed.
H317 - May cause an allergic skin reaction.
H350 - May cause cancer.
H370 - Causes damage to organs.
H372 - Causes damage to organs through prolonged or repeated exposure cause the hazard

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/sparks/open flames/hot surfaces. — No smoking.
P234 - Keep only in original container.
P250 - Do not subject to grinding/shock/.../friction
P262 - Do not get in eyes, on skin, or on clothing.
P264 - Wash 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/container to ... 
P307 + P311 - IF exposed: Call a POISON CENTER or doctor/physician.
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention.
P361 + P364- Remove/Take off immediately all contaminated clothing before reuse.
## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>Classification of the substance</th>
<th>HS %wt</th>
<th>SS %wt</th>
<th>RF %wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrocellulose</td>
<td>9004-70-0</td>
<td>Expl. 1.1 – H201 Flammable solid</td>
<td>60-80</td>
<td>60-80</td>
<td>60-80</td>
</tr>
<tr>
<td>Nitroglycerin</td>
<td>55-63-0</td>
<td>Expl. 1.1 – H201 Acute oral toxicity- Category 3 Skin sensitization- Category 1B Specific target organ toxicity (single exposure) -Category 1 Specific target organ toxicity (repeated exposure) -Category 1</td>
<td>15-40</td>
<td>15-40</td>
<td>15-40</td>
</tr>
<tr>
<td>Ethyl centralite</td>
<td>85-98-3</td>
<td>This product isn’t a hazardous product according to RPD classification criteria.</td>
<td>1-5</td>
<td>0.5-1.5</td>
<td>1-5</td>
</tr>
<tr>
<td>Potassium sulfate</td>
<td>7778-80-5</td>
<td>This product isn’t a hazardous product according to classification criteria.</td>
<td>0.1-1</td>
<td>0.1-1</td>
<td>0.1-1</td>
</tr>
<tr>
<td>Graphite</td>
<td>7782-42-5</td>
<td>Carcinogenic- Category 1A Specific target organ toxicity (repeated exposure) -Category 1</td>
<td>0.1-1</td>
<td>0.1-1</td>
<td>0.1-1</td>
</tr>
</tbody>
</table>

The actual concentration range is withheld as a trade secret.
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SECTION 4: FIRST AID MEASURES

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
(P302+P352)

Eye contact
Keeping eyes open, rinse immediately with running water for at least 15 minutes. If eye irritation develops, call a physician

Ingestion (P301-P310)
Call a poison center or a doctor immediately

4.2 Most important symptoms and effects, both acute and delayed

May cause cancer after exposure. Irritates the eye. May cause skin irritation. Specific target organ toxicity (single exposure) category 1 and specific target organ toxicity (repeated exposure) category 1 which may cause various health problems.

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-FIGHTING 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

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Date: May, 2018

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 NCT 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.

6.4 Reference to other sections
For waste disposal, see section 13 of this SDS

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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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>Limit value CAN</th>
<th>Limit value US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrocellulose</td>
<td>9004-70-0</td>
<td>Non disponible</td>
<td>Non disponible</td>
</tr>
<tr>
<td>Nitroglycerin</td>
<td>55-63-0</td>
<td>0.2 ppm</td>
<td>0.2 ppm</td>
</tr>
<tr>
<td>Ethyle centralite</td>
<td>77-89-4</td>
<td>Non disponible</td>
<td>Non disponible</td>
</tr>
<tr>
<td>Potassium sulfate</td>
<td>7778-80-5</td>
<td>Non disponible</td>
<td>Non disponible</td>
</tr>
<tr>
<td>Graphite</td>
<td>7782-42-5</td>
<td>2 mg/m³</td>
<td>2.5 mg/m³</td>
</tr>
</tbody>
</table>

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

Biological limit values

No biological exposure limits noted for the ingredient(s)

8.2 Exposure controls
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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
Cotton or Nitrile gloves

Respiratory protection
If ventilation is insufficient, wear a dust mask or a 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 granular solid

Physical state
Solid

Form
Granular

Color
Black

Odor
Not applicable

PH
Not applicable

Melting point/freezing point
Not applicable

Initial boiling point/boiling range
Not applicable
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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/cm³
Solubility(ies) Not available
Partition coefficient Not available
(n-octanol/water)
Auto-ignition temperature 170°C
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 oxides (NO₄)

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Produits</th>
<th>Espèces</th>
<th>LC50</th>
<th>LD50 oral</th>
<th>LD50 dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrocellulose</td>
<td>Rat</td>
<td>NA</td>
<td>5000 mg/kg</td>
<td>NA</td>
</tr>
<tr>
<td>Nitroglycerin</td>
<td>Rat</td>
<td>NA</td>
<td>105</td>
<td>280 mg/kg (Rabbit)</td>
</tr>
<tr>
<td>Potassium sulfate</td>
<td>Rat</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Graphite</td>
<td>Rat</td>
<td>&gt;64mg/L</td>
<td>10000</td>
<td>NA</td>
</tr>
<tr>
<td>Ethyl centralite</td>
<td>Rat</td>
<td>NA</td>
<td>2750</td>
<td>NA</td>
</tr>
</tbody>
</table>

Acute toxicity

Acute oral toxicity - Category 3

Skin corrosion/irritation

May cause skin irritation.

Serious eye damage/irritation

Causes serious eye irritation.

Respiratory sensitization

May cause respiratory irritation.

Skin sensitization

May cause skin sensitization.

Germ cell mutagenicity

This product or any of its ingredients are not known or reported to be mutagenic.

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 1

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.
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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 Based on available data the classification criteria are not met.

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.
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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

EMPTYED 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

Code of Practice:
Classification and Labelling of Substances and Preparations Dangerous for Supply.
Guidance Notes:

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Workplace Exposure Limits SIMDUT 2015

CAN Legislation: Bill n. 43 2015, chapter 13, An Act to promote information on the dangerousness of products present in the workplace and to amend the Act respecting occupational health and safety.

15.2 Chemical Safety Assessment

No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

Revision date: 2018-05-18

Revision No.: 0

General information:
This classification has been derived in accordance 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
STOT Specific Target Organ Toxicity
TWA Time Weighted Average
US United States
vPvB Very Persistent and Very Bioaccumulative
%wt Percentage weight
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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.