



Spherical Ball Powders
SAFETY DATA SHEET

May 2023

The following modern smokeless powders are
distributed by Hodgdon Powder Company.

Perfect Pattern™ **(EX-2015110879)**

High Gun™ **(EX-2018032045)**

1.4C EX Approvals in bold parenthesis

St. Marks Powder
A GENERAL DYNAMICS COMPANY
P.O. Box 222
St. Marks, FL 32355
(850) 925-6111

TRANSPORTATION EMERGENCIES
CALL CHEMTREC 1-800-424-9300

Safety Data Sheet

REVISION NO.: 10
REVISION DATE: 12/11/2021 (Supersedes 04/04/2018)

1. IDENTIFICATION

Product identifier

PRODUCT NAME: BALL POWDER® Propellant
SYNONYMS: Smokeless Propellant
PRODUCT CODES: WC, WAA®, WMG®, WMR®, WRF®, WPR®, WPT®, WSX®, WCR845®, SPI, SHP,
WCUNI, OBP®, SMP®, M38, M47, M48

Recommended uses of the substance or mixture and uses advised against
Product is intended for use in smokeless propellant applications only

Details of the supplier of the safety data sheet

PREPARED BY:
St. Marks Powder, Inc.
P.O. Box 222
St. Marks, FL 32355-0222
Telephone Number: (850) 925-6111
E-mail: lewis.wiedeman@gd-ots.com

EU CONTACT INFORMATION:
TSGE LLP of Concordia House
St. James Business Park
Grimbald Crag Court, Knaresborough
North Yorkshire, HG5 8QP, United Kingdom
Telephone Number: +44 (0)1423 799 633
E-mail: TSGE@TSGEurope.com

Emergency telephone number

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC (available 24 hours):
1-800-424-9300 US and Canada
+17035273887 International

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Physical Hazards Explosives Division 1.3, 1.4 or 4.1,
as approved by a competent authority

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.

Health Hazards	Acute Toxicity (oral)	Category 4
	Acute Toxicity (inhalation)	Category 2
	Eye Damage/Irritation	Category 2A
	Skin Sensitization	Category 1A
	Reproductive Toxicity	Category 1B
	Specific Organ Toxicity, Repeat Exposure	Category 2

Label Elements



Signal Word

DANGER

Hazard Statements Explosive; fire, blast or projection hazard. Harmful if swallowed. Causes serious eye irritation. May cause an allergic skin reaction. May cause damage to organs (circulatory system, blood, kidneys, liver) through prolonged or repeated exposure.

Precautionary statements

Prevention Keep away from heat. Ground or bond container and receiving equipment. Do not subject to shock or friction. Wear protective gloves, protective clothing and eye protection. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust.

Response Explosion risk. In case of fire: Evacuate area. Use water to extinguish. Do NOT fight fire when fire reaches explosives. If swallowed: Call a poison control center or doctor if you feel unwell. Rinse mouth. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If on skin: Wash with plenty of water. If eye or skin rash or irritation persists: Call a doctor. Wash contaminated clothing before reuse.

Storage/Disposal Store in a well-ventilated place away from direct sunlight. Keep container tightly closed. Store away from ignition sources. Store and dispose of container, waste and residues in accordance with all applicable legal and regulatory requirements.

3. PRODUCT COMPOSITION / INGREDIENT INFORMATION

Substances

Product is a mixture.

Mixtures

COMPONENT	CAS NO.	WEIGHT %
Nitrocellulose	9004-70-0	50-100
Nitroglycerin	55-63-0	0-42
Dibutyl Phthalate	84-74-2	0-10
Polyester Adipate	Not Available	0-10
Ethyl Centralite (diethyldiphenylurea)	85-98-3	0-10
Rosin	8050-09-07	0-5
Akardite II	13114-72-2	0-3
Potassium Nitrate	7757-79-1	0-3
Potassium Sulfate	7778-80-5	0-3

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COMPONENT	CAS NO.	WEIGHT %
Ethyl Acetate	141-78-6	0-2
Diphenylamine	122-39-4	0-1.5
N-Nitrosodiphenylamine	86-30-6	0-1.5
Tin Dioxide	18282-10-5	0-1.5
Calcium Carbonate	1317-65-3	0-1
Graphite	7782-42-5	0-1

4. FIRST AID MEASURES

Description of first aid measures

- Inhalation** Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear, give oxygen and continue to monitor. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). Keep affected person warm and at rest. Get immediate medical attention.
- Skin contact** Immediately wash exposed skin with plenty of soap and water while removing contaminated clothing and shoes. May be absorbed through the skin in harmful amounts. Call a physician if you feel unwell. Wash clothing before re-use. If clothing is to be laundered, inform the person performing the operation of the contaminants hazardous properties.
- Eye contact** Do not rub eyes. Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids wide apart. If eye irritation develops, call a physician.
- Ingestion** Rinse mouth thoroughly with water and give large amounts water to people not unconscious. Do NOT induce vomiting. Get immediate medical attention. Do not give anything by mouth if the person is unconscious or if having convulsions.

Most important symptoms and effects, both acute and delayed

Eye irritation. Symptoms may include itching, burning, redness and tearing. Skin contact may cause redness and pain. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. High concentrations of dust may irritate throat and respiratory system and cause coughing. A drop in blood pressure, headache, cyanosis and mental confusion may result from nitroglycerin in the product.

Indication of immediate medical attention and special treatment needed

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

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media** Large volumes of water should be applied as quickly as possible from automatic sprinklers or fire hose.
- Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this may spread fire.

Specific hazards arising from the product mixture	Toxic vapors/gases may be formed during a fire. Combustion products vary depending on fire conditions and other combustibles present. The predominant products will be carbon dioxide and oxides of nitrogen. Under some conditions, methane, carbon monoxide, irritating aldehydes and carboxylic acids, ammonia and hydrogen cyanide may be formed.
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	Fires 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 smokeless propellant may be encountered in distribution or ammunition manufacturing, and should be evaluated in the context of applicable fire codes.
Specific methods	Evacuate personnel to a safe area according to pre-determined evacuation plan. Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Explosive; fire, blast or projection hazard.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, 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.

Methods and materials for containment and cleaning up

Avoid dispersal of dust in the air (e.g. clearing dust surfaces with compressed air). Clean-up spills immediately using non-sparking utensils. 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 an overflow dam with filtration capabilities to retain material. Collect dust using a vacuum cleaner equipped with HEPA filter. Large Spills: Sweep, shovel or vacuum up spillage and collect in suitable container for disposal. For a spillage into water: where possible, remove any intact containers from the water. Clean contaminated surfaces thoroughly to remove residual contamination. Never return spilled material to original containers for re-use. For waste disposal, see section 13 of this SDS.

7. HANDLING AND STORAGE

Precautions for safe Handling

Do not handle until all safety precautions 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.

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Do not taste or swallow. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Smokeless powder contains stabilizers and deteriorates very slowly under proper storage conditions. Old smokeless powder should be checked for deterioration regularly. Deteriorating smokeless powder produces an acidic odor and may produce reddish-brown fumes. Dispose of deteriorating smokeless powder through, for example, controlled open burning in small quantities (products should be submerged in water until burned). Smokeless powder should not be exposed to excessive heat, as this can accelerate deterioration. Deterioration produces an acidity that accelerates further reaction and has been known, because of heat generated by the reaction, to cause spontaneous combustion.

Conditions for safe storage

The ideal condition for safe storage is at 21°C (70°F), 50% relative humidity (decomposition becomes measurable above 50°C (122°F). Propellant stored in the original container, subject to variations in temperature and humidity ranging from tropic to arctic conditions, can be expected to perform satisfactorily and safely in the ammunition it was intended for. Keep container tightly closed. Store in a cool, dry ventilated place away from all sources of ignition. Store away from incompatible materials (see Section 10 of this SDS).

The expected shelf life when stored in accordance with the conditions of safe storage, has been demonstrated to be in excess of 20 years. It is recommended that older powders are checked for decomposition.

For additional information regarding handling and storage guidelines, see "Properties and Storage of Smokeless Powder" published by the SPORTING ARMS AND AMMUNITION MANUFACTURERS INSTITUTE, INC (SAAMI), 11 Mile High Road, Newtown, CT 06405 (www.saami.org)

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits

Chemical Name	CAS Number	ACGIH TLV	OSHA PEL	Other Information
Nitrocellulose	9004-70-0	None established	None established	
Nitroglycerin	55-63-0	0.05 ppm Skin Designation	0.2 ppm 2.0 mg/m ³ OSHA limit applies to skin	Air sampling alone is insufficient to accurately quantify exposure. Measures to prevent significant cutaneous absorption may be required.
Dibutyl Phthalate	84-74-2	5 mg/m ³	5 mg/m ³	
Polyester Adipate	Not Available	Not Available	Not Available	
Ethyl Centralite (diethyldiphenylurea)	85-98-3	None established	None established	
Rosin	8050-09-7	None established	None established	
Arkadite II	13114-72-2	None established	None established	

Chemical Name	CAS Number	ACGIH TLV	OSHA PEL	Other Information
Potassium Nitrate	7757-79-1	None established	None established	
Potassium Sulfate	7778-80-5	None established	None established	
Ethyl Acetate	141-78-6	400 ppm	400 ppm 1400 mg/m ³	
Diphenylamine	122-39-4	10 mg/m ³	None established	
N-Nitrosodiphenylamine	86-30-6	None established	None established	
Tin Dioxide	18282-10-5	2 mg/m ³	None established	Tin oxide and inorganic compounds
Calcium Carbonate	1317-65-3	None established	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)	
Graphite	7782-42-5	2 mg/m ³ (respirable fraction)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)	

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Local exhaust ventilation is recommended if significant dusting occurs. Otherwise, use general exhaust ventilation. Eye wash fountain and emergency showers are recommended.

Individual protection measures, such as personal protective equipment:

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection Wear appropriate chemical resistant, flame retardant clothing (e.g. coveralls or lab coat).

Hand protection Wear impermeable gloves.

Respiratory protection Use a NIOSH/MSHA approved respirator with organic vapor cartridge and particulate filter if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

General hygiene considerations Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Granular grey to black colored solid
Physical state	Solid
Form	Granular
Color	Grey to black
Odor	Odorless
Odor threshold	Not available
pH	Not applicable
Melting point/freezing point	Not applicable
Initial boiling point/boiling range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Flammable Solid
Upper/lower flammability or explosive limits	Not available
Vapor pressure	<1 mm Hg
Vapor density	Not applicable
Relative density	Bulk density 0.5 - 1 (g/cc)
Solubility(ies)	Negligible in water
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	190-200°C (374-392°F)
Decomposition temperature	Decomposition becomes measurable above 50°C (122°F).
Viscosity	Not applicable
Other information	Product can explode if ignited and confined

10. STABILITY AND REACTIVITY

Reactivity	Can ignite due to mechanical shock and/or impact. Can ignite due to static discharge (minimum ignition energy 200mJ). Product can explode if ignited and confined.
Chemical stability	Unstable when exposed to sources of heat, sunlight or artificial ultraviolet light.
Possibility of hazardous Reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid contact with incompatible materials. Direct sunlight, artificial ultraviolet light, flame, and heat.
Incompatible materials	Strong acids, alkalis, oxidizers, and amines.
Hazardous decomposition products	Carbon monoxide, carbon dioxide, oxides of nitrogen. Decomposition becomes measurable above 50°C (122°F)

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	Dust may irritate respiratory system.
Skin contact	May be harmful in contact with skin. May cause skin irritation. May cause an allergic skin reaction.
Eye contact	Causes eye irritation.
Ingestion	Harmful if swallowed. Ingestion may cause gastrointestinal irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact may cause irritation, itching, burning, redness and tearing. Skin contact may cause redness and pain. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. High concentrations of dust may irritate throat and respiratory system and cause coughing. A drop in blood pressure, headache, cyanosis and mental confusion may result from nitroglycerin in the product.

Information on toxicological effects

Acute toxicity	Nitroglycerine will produce dilation of blood vessels and a drop in blood pressure which may affect the heart. It has also been shown to cause methemoglobinemia (cyanosis).
Skin corrosion/irritation	May cause skin irritation.
Serious eye damage/eye 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	This product contains N-Nitrosodiphenylamine, which is reported as a possible human carcinogen by IARC.
Reproductive toxicity	May damage fertility or the unborn child.
Specific target organ toxicity - single exposure	Not Classified
Specific target organ toxicity - repeated exposure	May cause damage to the circulatory system, blood, kidneys and liver through prolonged or repeated exposure.
Aspiration hazard	Due to the physical form of the product it is not an aspiration hazard.
Chronic effects	This product contains Diphenylamine, which has been shown to induce kidney damage. The low concentration of this material in, and the nature of the product, would preclude development of such an effect.

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12. ECOLOGICAL INFORMATION

Ecotoxicity	Toxic to aquatic life with long lasting effects.
Persistence and degradability	No data available on product mixture.
Bioaccumulative potential	No data available on product mixture.
Mobility in soil	No data available on product mixture.
Other adverse effects	No other adverse environmental effects known.

13. DISPOSAL CONSIDERATIONS

Disposal instructions

If material becomes a waste, it may be treated by controlled burning in small quantities if permissible by relevant regulatory agencies (such as in a RCRA permitted open burn unit or incinerator). 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 regulations

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 regulations.

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.

14. TRANSPORT INFORMATION

DOT / IMDG:

Refer to competent authority approval to select the correct classification below:

UN Numbers	UN0161; UN0509; NA3178
UN Proper Shipping Name	Powder, smokeless; Smokeless powder for small arms
Transport Hazard Class(es)	1.3C; 1.4C; 4.1
Packing Group	Not applicable

This material is a dangerous good for transport. All involved staff must be appropriately trained.

IATA:

When Division 1.4C has been approved by a competent authority:

UN Number	UN 0509
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UN Proper Shipping Name Powder, smokeless
Transport Hazard Class(es) 1.4C
Packing Group Not applicable
This material is a dangerous good for transport. All involved staff must be appropriately trained.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

15. REGULATORY INFORMATION

US Federal Regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA Hazardous Substance List (40 CFR 302.4)

Nitroglycerine (10 lbs); Dibutyl phthalate (10 lbs); N-Nitrosodiphenylamine (100 lbs); Ethyl acetate (5000 lbs)

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - Yes

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
Yes

SARA 313 (TRI reporting)

Nitroglycerin (55-63-0); Dibutyl Phthalate (84-74-2); Diphenyl amine (122-39-4)

US State Regulations

US. Massachusetts RTK - Substance List

Nitrocellulose (9004-70-0); Nitroglycerin (55-63-0); Dibutyl Phthalate (84-74-2); Potassium Nitrate (7757-79-1); Ethyl Acetate (141-78-6); Diphenyl amine (122-39-4); N-Nitrosodiphenylamine (86-30-6); Calcium Carbonate (1317-65-3); Graphite (7782-42-5).

US. New Jersey Worker and Community Right-to-Know Act

Nitrocellulose (9004-70-0); Nitroglycerin (55-63-0); Dibutyl Phthalate (84-74-2); Potassium Nitrate (7757-79-1); Ethyl Acetate (141-78-6); Diphenyl amine (122-39-4); N-Nitrosodiphenylamine (86-30-6); Tin dioxide (18282-10-5); Calcium Carbonate (1317-65-3); Graphite (7782-42-5).

US. Pennsylvania Worker and Community Right-to-Know Law

Nitrocellulose (9004-70-0); Nitroglycerin (55-63-0); Dibutyl Phthalate (84-74-2); Potassium Nitrate (7757-79-1); Ethyl Acetate (141-78-6); Diphenyl amine (122-39-4); N-Nitrosodiphenylamine (86-30-6); Calcium Carbonate (1317-65-3); Graphite (7782-42-5).

US. Rhode Island RTK

Nitroglycerin (55-63-0); Dibutyl Phthalate (84-74-2); Ethyl Acetate (141-78-6); Diphenyl amine (122-39-4); N-Nitrosodiphenylamine (86-30-6).

US. California Proposition 65

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California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material contains a chemical currently listed as a carcinogen and/or developmental and reproductive toxin.

Toxic Substance Control Act

Components of this product are listed on the United States & Puerto Rico Toxic Substances Control Act (TSCA) Inventory

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date: 12/11/2021
Revision No.: 10 (Supersedes 04/04/2018)

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 to assume liability for loss, injury, damage or expense due to improper use.