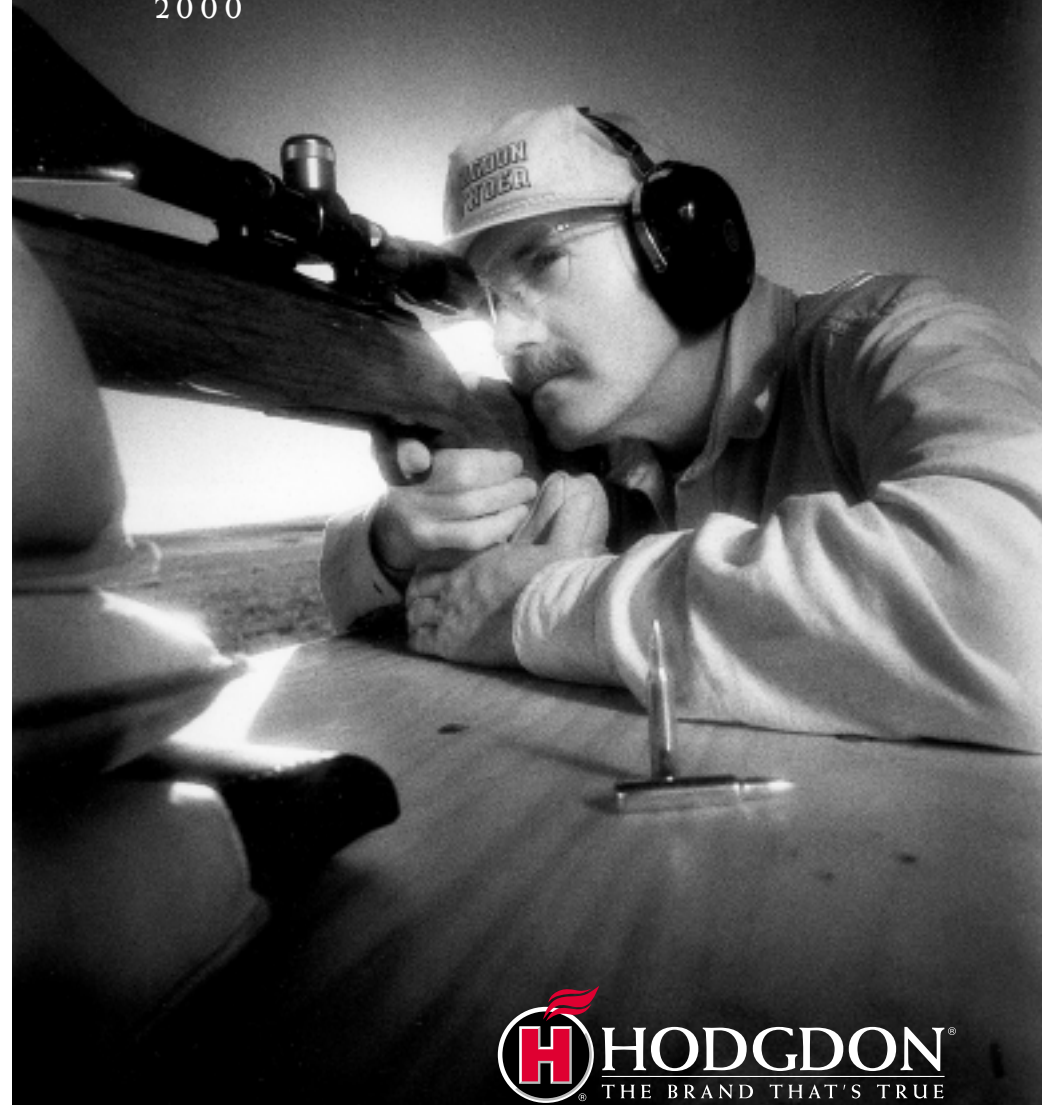


BASIC
RELOADERS
MANUAL
2000



 **HODGDON**[®]
THE BRAND THAT'S TRUE



HODGDON *Shotgun/Pistol Powders*

Hodgdon shotgun and pistol powders give shooters uncompromising quality, consistent velocities and clean-burning performance. From 22s to

44 Magnums, 410 to 10 gauge, there's a powder to meet any need.



HODGDON *Spherical Rifle Powders*

Hodgdon spherical powders are great all-round propellants for a variety of rifles. You'll not only

enjoy consistently high performance, you'll also appreciate the consistent charge weights that Hodgdon spherical powders give you.



HODGDON *Extreme™ Rifle Powders*

Our exclusive line of extruded rifle powders — Hodgdon Extreme™ — was developed to give shooters consistent performance, load after load, in even the most extreme heat and cold.



HODGDON *New for 2000*



Benchmark



Long Shot



Pyrodex®
Ammo Pack

HODGDON

Smokeless Propellants

Powder	Type	Container Size
Titewad	Shotshell	14oz 4lb 8lb
Clays	Shotshell/Pistol	14oz 4lb 8lb
International	Shotshell	14oz 4lb 8lb
Titegroup	Pistol	1lb 4lb 8lb
HP-38	Pistol	1lb 4lb 8lb
Universal	Shotgun/Pistol	1lb 4lb 8lb
HS-6	Shotgun/Pistol	1lb 5lb 8lb
HS-7	Shotgun/Pistol	1lb 5lb 8lb
H110	Shotgun/Pistol	1lb 5lb 8lb
Lil' Gun	Shotgun/Pistol	1lb 4lb 8lb
H4227	Pistol/Rifle	1lb 5lb 8lb
H4198	Rifle	1lb 5lb 8lb
H322	Rifle	1lb 5lb 8lb
H335	Rifle	1lb 5lb 8lb
H4895	Rifle	1lb 5lb 8lb
Varget	Rifle	1lb 5lb 8lb
BL-C(2)	Rifle	1lb 5lb 8lb
H380	Rifle	1lb 5lb 8lb
H414	Rifle	1lb 5lb 8lb
H4350	Rifle	1lb 5lb 8lb
H4831	Rifle	1lb 5lb 8lb
H4831SC	Rifle	1lb 5lb 8lb
H1000	Rifle	1lb 5lb 8lb
H870	Rifle	1lb 5lb 8lb
H50BMG	Rifle	1lb 8lb



WARNING

Ballistic data shown in this manual was obtained in Hodgdon's laboratory under strictly controlled conditions. Your reloads must contain the exact combinations listed in this manual. **NEVER EXCEED** charge recommendations in this manual.

Ballistic data varies considerably depending on many factors, including components used, how such components are assembled, the type of firearm used, and the reloading techniques and safety precautions utilized by the individual.

NEVER mix any two powders regardless of type, brand or source. **NEVER** substitute any smokeless powder for black powder or for Pyrodex®.

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The individual assumes the risk of safe loading practices. Failure to do so or violation of any of the above warnings could result in severe personal injury (including death) or gun damage to the user or bystanders.

USE THIS DATA WITH HODGDON BRAND POWDERS ONLY

Reduce data 10% to start and work up.

DO NOT EXCEED THE LOADS SHOWN IN THIS GUIDE

Charter Member

Charter Member



MISSION STATEMENT

Our mission is to provide quality propellants, other products, and services to sportsmen, governing units, and other businesses in a manner which enhances the quality of life for our stockholders, employees, customers, associates, and suppliers. In doing so, we will deal with integrity and honesty, reflecting that people are more important than dollars and that our purpose is to bring credit to our Lord Jesus Christ.

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HODGDON POWDER SHOTGUN USAGE

	TARGET				LIGHT FIELD				HEAVY FIELD						
	12 GA	20 GA	28 GA	410 BORE	12 GA	16 GA	20 GA	28 GA	410 BORE	10 GA	12 GA	16 GA	20 GA	28 GA	410 BORE
CLAYS	X				X										
TITEWAD	X				X										
INTERNATIONAL	X	X			X		X								
UNIVERSAL	X	X	X		X	X	X			X	X	X			
HS-6			X			X	X	X		X	X	X			
HS-7							X	X		X	X	X	X	X	
LONGSHOT	X	X	X						X	X	X	X	X	X	
H110				X											X
LIL' GUN				X				X							X

HODGDON POWDER PISTOL USAGE

	TARGET	LIGHT DUTY	MEDIUM DUTY	MAGNUM
	CLAYS	X	X	
TITEGROUP	X	X		
UNIVERSAL	X	X	X	
HP-38	X	X	X	
HS-6		X	X	
HS-7			X	X
H110			X	X
H4227			X	X
LIL' GUN			X	X

HODGDON POWDER RIFLE USAGE

	TARGET	SILHOUETTE	LIGHT	MEDIUM	MAGNUM	50 CAL.
	H4227			X		
LIL' GUN			X			
H4198	X		X			
H322	X	X	X	X		
BENCHMARK	X	X	X	X		
H335	X	X	X	X		
H4895	X	X	X	X		
VARGET	X	X	X	X		
BL-C(2)	X	X	X	X		
H380		X		X	X	
H414		X		X	X	
H4350		X		X	X	
H450				X	X	
H4831				X	X	
H4831 SC				X	X	
H1000				X	X	
H870					X	X
H50BMG					X	X

SMOKELESS PISTOL & SHOTGUN POWDERS

▶ EXTREME POWDERS

In Order of Approximate Burning Rate

TITEWAD™ Through advanced technology, Hodgdon Powder Co. has produced a superior flattened spherical shotgun powder. Unlike spherical propellants in the past, TITEWAD features low charge weights, mild muzzle report, minimum recoil and reduced residue for optimum ballistic performance. This outstanding propellant designed for 12 gauge only, meters superbly and is ideal for 7/8, 1 and 1 1/8 ounce loads. As the name implies, "a little goes a long way!"

CLAYS™ Introduced in January, 1992, CLAYS has "taken the clay target world by storm". It is the most clean burning, consistent 12 ga. 7/8 oz., 1 oz. and 1 1/8 oz. powder available today. The superb burning characteristics of this powder produce soft, smooth recoil, ultra clean burning, mild muzzle report, and excellent patterns. These features transfer directly to handgun applications where target shooting is the main goal. 45 ACP, 38 Special and 9mm are only a few of the cartridges where CLAYS provides "tack driving" target accuracy with flawless functioning.

INTERNATIONAL™ INTERNATIONAL is the second in the "CLAYS" series of powders. It is positioned in burning speed to accommodate 12 ga., 2 3/4" light, medium and heavy 1 1/8 oz. loads, with some very nice 1oz. listings. Also, it works splendidly in 20 ga., 7/8 oz. target and light field loads. As with CLAYS, clean burning and flawless functioning is the rule.

TITEGROUP™ As the name implies, this new spherical propellant was designed for accuracy. Because of the unique design, this powder provides flawless ignition with all types of primers including the lead-free versions. Unlike pistol powders of the past, powder position in large cases (45 Colt, 357 Magnum and others) has virtually no effect on velocity and performance. Cowboy Action, Bullseye and Combat Shooters should love this one! TITEGROUP has it all, low charge weight, clean burning, mild muzzle report and superb, uniform ballistics.

HP38™ HP38 is a spherical pistol powder that is great for low velocity and mid-range target loads in 38 Special, 44 Special and 45 ACP. This high energy powder provides economy in loading.

UNIVERSAL™ UNIVERSAL handles the broadest spectrum of cartridges for both pistol and shotgun. From the 25 ACP to the 44 Magnum, UNIVERSAL provides outstanding performance. In shotgun, it produces excellent loads in 28 ga. 3/4 oz., 20 ga. 7/8 oz., 16 ga. 1 oz., and even 12 ga. 1 1/4 oz. As with all the "CLAYS" series powders, clean burning and uniformity are part of its attributes.

HS-6™ HS-6 is a fine spherical propellant that has wide application in pistol and shotshell. In pistol, 9mm, 38 Super, 40 S&W and 10mm Auto are some of the cartridges where HS-6 provides top performance. In shotshell HS-6 yields excellent heavy field loadings in 10 ga., 12 ga., 16 ga., 20 ga., and even the efficient and effective 28 ga. HS-6 is truly an outstanding spherical propellant.

LONGSHOT™ This new spherical shotshell powder is the most versatile heavy field propellant Hodgdon has ever produced. Great field loads in 10 ga., 12 ga., 16 ga., 20 ga., and 28 ga. are shown herein. This propellant provides true magnum velocities with superb patterns. In addition, LONGSHOT is the best choice for those competitors shooting "race" games such as "Buddy" shoots, "Annie Oakleys" and more.

▶ **H4227** H4227 is the fastest of our Extreme Extruded rifle propellants. Because of its' burning speed, it doubles as a magnum pistol powder. Top applications are the 22 Hornet, 357 Maximum, 357 Magnum, 44 Magnum and the mighty 454 Casull. For stability under extreme conditions, H4227 is the top choice.

H110™ H110 is the spherical powder that screams "no wimps, please!" It delivers top velocities with top accuracy in the 44 Magnum, 454 Casull and the 475 Linebaugh. Silhouette shooters claim it is the most accurate 44 powder they have ever used. In addition, H110 is "the" choice for the miniscule 410 Bore shotgun. It handles all 2 1/2", 1/2 oz. loads, as well as all 11/16 oz. loads for the 3" version.

LIL'GUN™ The 410 BORE has long been difficult to load due to shortcomings in powder fit, metering, along with poor burning characteristics. Not any more! LIL'GUN was designed to fit, meter and perform flawlessly in the 410 BORE. No more spilled shot or bulged cases. In addition, LIL'GUN has many magnum pistol applications and is superb in the 22 Hornet.

SMOKELESS RIFLE POWDERS

▶ EXTREME POWDERS

In Order of Approximate Burning Rate

▶ **H4198** This Extreme Extruded propellant has gone through some changes since its inception, all the time maintaining the same important burning speed of the past. The kernels were shortened for improved metering and necessary elements were added to make it extremely insensitive to hot/cold temperatures. H4198 is outstanding in cartridges like the 222 Remington, 444 Marlin and the 7.62 x 39.

▶ **H322™** This powder has won more benchrest matches than all other propellants combined. It provides match grade accuracy in small and medium capacity cartridges like the 223 Remington, 6mm PPC and the 7mm TCU. As a fine extruded powder, it flows through powder measures with superb accuracy.

▶ **BENCHMARK™** As the name implies, this Extreme Extruded propellant was developed for precision cartridges. As such, it is ideally suited for benchrest and small varmint cartridges like the 6mm PPC, 22 PPC, 6mm BR, 22 BR, 223 Rem. and 222 Rem.. Additionally, it performs superbly in the 308 Winchester with light match bullets like the 147 gr. and 155 gr. versions. With small, easy metering granules, competitors will love how it flows through progressive presses.

H335™ H335 originated as a military powder, used for the 5.56 NATO, or 223 Remington as handloaders know it. Obviously, it sees endless use in the 222 Remington, 223 Remington and other small cartridges. In particular, prairie dog shooters will find this a favorite, as J.B. Hodgdon has for years!

▶ **H4895™** H4895 is a most versatile rifle powder. This member of the Extreme Extruded line is great for 17 Remington, 250-3000 Savage, 308 Winchester and 458 Winchester, to name just a few. It is amazingly accurate in every cartridge where it is listed in our data. It had its origin in the 30-06 as a military powder and was the first powder Bruce Hodgdon sold to the loading public.

▶ **VARGET™** The first of Hodgdon's revolutionary Extreme Extruded Powders, VARGET features small extruded grains for uniform metering, insensitivity to hot/cold temperatures and higher energy for improved velocities over other powders in its burning speed class. Easy ignition and clean burning characterize other features that translate into superb accuracy, higher scores and more clean, one shot kills. Outstanding performance and velocity can be obtained in such popular cartridges as the 223 Remington, 22-250 Remington, 308 Winchester, 30-06, 375 H&H and many more.

BL-C(2)™ BL-C(2) is a spherical powder that began as a military powder used in the 7.62 NATO, commonly known as the 308 Winchester. When it was first introduced to the handloader, benchrest shooters and other target shooters made it an instant success. BL-C(2) works extremely well in the 223 Remington, 17 Remington, 22 PPC and of course, the 308 Winchester, plus many more.

H380™ H380 was an unnamed spherical rifle propellant when the late Bruce Hodgdon first used it. When a 38.0 grain charge behind a 52 grain bullet gave one hole groups from his 22 caliber wildcat (now called the 22-250), he appropriately named the powder H380. H380 is also a superb performer in the 220 Swift, 243, 257 Roberts and other fine varmint cartridges.

H414™ This spherical powder has an extremely wide range of use. From the 22-250 Remington to the 375 H&H, it will give excellent results. It is simply ideal in the 30-06. As with all of our spherical powders, it delivers incredibly consistent charge weights through nearly any type of powder measure. H414 yields similar results to H4350 in most cartridges, although charge weights will vary.

▶ **H4350** This Extreme Extruded propellant is a burning speed that has been known to shooters for decades. During that time, Hodgdon has modernized H4350 by shortening the grains for improved metering and making it insensitive to hot/cold temperatures. H4350 is great in such cartridges as the 243 Winchester, 6mm Remington, 270 Winchester, 338 Winchester Magnum and many more. For magnums with light to moderate weight bullets, it can't be beat!

▶ **H4831™** It is probably safe to say more big game has been taken with H4831 than any other powder. Bruce Hodgdon was the first supplier to introduce this popular burning rate in 1950. Since that time it has become a favorite for cartridges like the 270 Winchester, 25-06 Remington, 280 Remington and 300 Winchester Magnum. As an Extreme Extruded propellant it shares the fine quality of insensitivity to hot/cold temperatures, as well as superb uniformity from lot to lot.

▶ **H4831SC™** Ballistically, this Extreme Extruded powder is the exact copy of H4831. Physically, it has a shorter grain size, therefore, the designation SC or short cut. The shorter, more compact kernels allow the powder to flow through powder measures more smoothly, helping to alleviate the constant cutting of granules. With the smoother flow characteristics comes more uniform charge weights, while the individual grains orient more compactly, creating better loading density.

▶ **H1000™** This very slow burning Extreme Extruded powder is perfect for highly overbored magnums like the 7mm Remington Magnum, 7mm STW and the 30-378 Weatherby. In addition, with heavy bullets, H1000 gives top velocity and performance in such cartridges as the 6mm-284, 257 Weatherby, 270 Winchester, and 300 Winchester Magnum. In a short period of time this powder has achieved considerable notoriety among long range match shooters.

H870™ This spherical powder is great for heavy bullets in big, overbore magnum loads. H870 is also used in the 50 caliber BMG and is the only surplus powder left in the canister line. Because it is inexpensive, it is frequently used in large capacity cases where economy is a major consideration.

▶ **H50BMG** As the name implies, this new generation Extreme Extruded rifle propellant is a clean burning powder designed expressly for the 50 caliber BMG cartridge. Because it shares the same technology as VARGET, H50BMG displays a high degree of thermal stability in temperature extremes.

Tests have conclusively proven that H50BMG yields very low extreme spreads in velocity and pressure. All this translates into small groups at extended ranges!

HODGDON

THE FAVORITE OF HANDLOADERS Since 1946

PROPERTIES OF SMOKELESS POWDER

Smokeless powders, or propellants, are essentially mixtures of chemicals designed to burn under controlled conditions at the proper rate to propel a projectile from a gun.

Smokeless powders are made in three forms:

1. Thin, circular flakes or wafers
2. Small cylinders
3. Small spheres

Single-base smokeless powders derive their main source of energy from nitrocellulose.

The energy released from double-base smokeless powders is derived from both nitrocellulose and nitroglycerin.

All smokeless powders are extremely flammable; by design, they are intended to burn rapidly and vigorously when ignited.

Oxygen from the air is not necessary for the combustion of smokeless powders since they contain sufficient built-in oxygen to burn completely, even in an enclosed space such as the chamber of a firearm.

In effect, ignition occurs when the powder granules are heated above their ignition temperature. This can occur by exposing powder to:

1. A flame such as a match or primer flash.
2. An electrical spark or the sparks from welding, grinding, etc.
3. Heat from an electric hot plate or a fire directed against or near a closed container even if the powder itself is not exposed to the flame.

When smokeless powder burns, a great deal of gas at high temperature is formed. If the powder is confined, this gas will create pressure in the surrounding structure. The rate of gas generation is such, however, that the pressure can be kept at a low level if sufficient space is available or if the gas can escape.

In this respect smokeless powder differs from blasting agents or high explosives such as dynamite or blasting gelatin, although smokeless powder may contain chemical ingredients common to some of these products.

High explosives such as dynamite are made to detonate, that is, to change from solid state to gaseous state with evolution of intense heat at such a rapid rate that shock waves are propagated through any medium in contact with them. Such shock waves exert pressure on anything they contact, and, as a matter of practical consideration, it is almost impossible to satisfactorily vent away the effects of a detonation involving any appreciable quantity of dynamite.

Smokeless powder differs considerably in its burning characteristics from common "black powder."

Black powder burns essentially at the same rate out in the open (unconfined) as when in a gun.

When ignited in an unconfined state, smokeless powder burns inefficiently with an orange-colored flame. It produces a considerable amount of light brown noxious smelling smoke. It leaves a residue of ash and partially burned powder. The flame is hot enough to cause severe burns.

The opposite is true when it burns under pressure as in a cartridge fired in a gun. Then it produces very little smoke, a small glow, and leaves very little or no residue. The burning rate of smokeless powder increases with increased pressure.

PROPERTIES OF SMOKELESS POWDER continued

If burning smokeless powder is confined, gas pressure will rise and eventually can cause the container to burst. Under such circumstances, the bursting of a strong container creates effects similar to an explosion.

For this reason, the Department of Transportation (formerly Interstate Commerce Commission) sets specifications for shipping containers for propellants and requires tests of loaded containers – under actual fire conditions – before approving them for use.

When smokeless powder in D.O.T. approved containers is ignited during such tests, container seams split open or lids pop off – to release gases and powder from confinement at low pressure.

HOW TO CHECK SMOKELESS POWDER FOR DETERIORATION

Although modern smokeless powders are basically free from deterioration under proper storage conditions, safe practices require a recognition of the signs of deterioration and its possible effects.

Powder deterioration can be checked by opening the cap on the container and smelling the contents. Powder undergoing deterioration has an irritating acidic odor. (Don't confuse this with common solvent odors such as alcohol, ether and acetone.)

Check to make certain that powder is not exposed to extreme heat as this may cause deterioration. Such exposure produces an acidity which accelerates further reaction and has been known, because of the heat generated by the reaction, to cause spontaneous combustion.

Never salvage powder from old cartridges and do not attempt to blend salvaged powder with new powder. Don't accumulate old powder stocks.

The best way to dispose of deteriorated smokeless powder is to burn it out in the open at an isolated location in small shallow piles (not over 1" deep). The quantity burned in any one pile should never exceed one pound. Use an ignition train of slow burning combustible material so that the person may retreat to a safe distance before powder is ignited. For more instructions call Hodgdon Powder.

CONSIDERATIONS FOR STORAGE OF SMOKELESS POWDER

Smokeless powder is intended to function by burning, so it must be protected against accidental exposure to flame, sparks or high temperatures.

For these reasons, it is desirable that storage enclosures be made of insulating materials to protect the powder from external heat sources.

Once smokeless powder begins to burn, it will normally continue to burn (and generate gas pressure) until it is consumed.

D.O.T. approved containers are constructed to open up at low internal pressures to avoid the effects normally produced by the rupture or bursting of a strong container.

Storage enclosures for smokeless powder should be constructed in a similar manner:

1. Of fire-resistant and heat-insulating materials to protect contents from external heat.
2. Sufficiently large to satisfactorily vent the gaseous products of combustion which would result if the quantity of smokeless powder within the enclosure accidentally ignited.

If a small, tightly enclosed storage enclosure is loaded to capacity with containers of smokeless powder, the walls of the enclosure will expand or move outwards to release the gas pressure – if the powder in storage is accidentally ignited.

Under such conditions, the effects of the release of gas pressure are similar or identical to the effects produced by an explosion.

CONSIDERATIONS FOR STORAGE OF SMOKELESS POWDER

Hence only the smallest practical quantities of smokeless powder should be kept in storage, and then in strict compliance with all applicable regulations and recommendations of the National Fire Protection Association.

RECOMMENDATIONS FOR STORAGE OF SMOKELESS POWDER

STORE IN A COOL, DRY PLACE. Be sure the storage area selected is free from any possible sources of excess heat and is isolated from open flame, furnaces, hot water heaters, etc. Do not store smokeless powder where it will be exposed to the sun's rays. Avoid storage in areas where mechanical or electrical equipment is in operation. Restrict from the storage areas heat or sparks which may result from improper, defective or overloaded electrical circuits.

DO NOT STORE SMOKELESS POWDER IN THE SAME AREA WITH SOLVENTS, FLAMMABLE GASES OR HIGHLY COMBUSTIBLE MATERIALS.

STORE ONLY IN DEPARTMENT OF TRANSPORTATION APPROVED CONTAINERS. Do not transfer the powder from an approved container into one which is not approved

DO NOT SMOKE IN AREAS WHERE POWDER IS STORED OR USED. Place appropriate "No Smoking" signs in these areas.

DO NOT SUBJECT THE STORAGE CABINETS TO CLOSE CONFINEMENT. STORAGE CABINETS SHOULD BE CONSTRUCTED OF INSULATING MATERIALS AND WITH A WEAK WALL, SEAMS OR JOINTS TO PROVIDE AN EASY MEANS OF SELF-VENTING.

DO NOT KEEP OLD OR SALVAGED POWDERS. Check old powders for deterioration regularly. Destroy deteriorated powders immediately.

OBEY ALL REGULATIONS REGARDING QUANTITY AND METHODS OF STORING. Do not store all your powders in one place. If you can, maintain separate storage locations. Many small containers are safer than one or more large containers.

KEEP YOUR STORAGE AND USE AREA CLEAN. Clean up spilled powder promptly. Make sure the surrounding area is free of trash or other readily combustible materials.

10-3 SMOKELESS PROPELLANTS

10-3.1 Quantities of smokeless propellants not exceeding 25 lb (11.3 kg), in shipping containers approved by the U.S. Department of Transportation, may be transported in a private vehicle.

10-3.2 Quantities of smokeless propellants exceeding 25 lb (11.3 kg) but not exceeding 50 lb (22.7 kg), transported in a private vehicle, shall be transported in a portable magazine having wood walls of at least 1 in. (25.4 mm) nominal thickness.

10-3.3 Transportation of more than 50 lb (22.7 kg) of smokeless propellants in a private vehicle is prohibited.

10-3.4 Commercial shipments of smokeless propellants in quantities not exceeding 100 lb (45.4 kg) are classified for transportation purposes as flammable solids when packaged according to U.S. Department of Transportation Hazardous Materials Regulations (Title 49, Code of Federal Regulations, Part 173.197a), and shall be transported accordingly.

10-3.5 Commercial shipments of smokeless propellants exceeding 100 lb (45.4 kg) or not packaged in accordance with the regulations cited in 10-3.4 shall be transported according to U.S. Department of Transportation regulations for Class B propellant explosives.

10-3 SMOKELESS PROPELLANTS continued

10-3.6 Smokeless propellants shall be stored in shipping containers specified by U.S. Department of Transportation Hazardous Materials Regulations.

10-3.7 Smokeless propellants intended for personal use in quantities not exceeding 20 lb (9.1 kg) may be stored in original containers in residences. Quantities exceeding 20 lb (9.1 kg), but not exceeding 50 lb (22.7 kg), may be stored in residences if kept in a wooden box or cabinet having walls of at least 1 in. (25.4 mm) nominal thickness.

10-3.8 Not more than 20 lb (9.1 kg) of smokeless propellants, in containers of 1 lb (0.45 kg) maximum capacity, shall be displayed in commercial establishments.

10-3.9 Commercial stocks of smokeless propellants shall be stored as follows:

- Quantities exceeding 20 lb (9.1 kg), but not exceeding 100 lb (45.4 kg), shall be stored in portable wooden boxes having walls of at least 1 in. (25.4 mm) thickness.
- Quantities exceeding 100 lb (45.4 kg), but not exceeding 800 lb (363 kg), shall be stored in nonportable storage cabinets having walls of at least 1 in (25.4 mm) thickness. Not more than 400 lb (181 kg) may be stored in any one cabinet and cabinets shall be separated by a distance of at least 25 ft (7.63 m) or by a fire partition having a fire resistance of at least 1 hour.
- Quantities exceeding 800 lb (363 kg), but not exceeding 5,000 lb (2268 kg), may be stored in a building if the following requirements are met:
 - The warehouse or storage room shall not be accessible to unauthorized personnel.
 - Smokeless propellant shall be stored in nonportable storage cabinets having wood walls at least 1 in. (25.4 mm) thick and having shelves with no more than 3 ft. (0.92 m) separation between shelves.
 - No more than 400 lb. (181 kg) shall be stored in any one cabinet.
 - Cabinets shall be located against walls of the storage room or warehouse with at least 40 ft (12.2 m) between cabinets.
 - Separation between cabinets may be reduced to 20 ft (6.1 m) if barricades twice the height of the cabinets are attached to the wall, midway between each cabinet. The barricades shall extend at least 10 ft. (3 m) outward, shall be firmly attached to the wall, and shall be constructed of 1/4 in. (6.4 mm) boiler plate, 2 in. (51 mm) thick wood, brick, or concrete block.
 - Smokeless propellant shall be separated from materials classified by the U.S. Department of Transportation as flammable liquids, flammable solids, and oxidizing materials by a distance of 25 ft. (7.63 m) or by a fire partition having a fire resistance of at least 1 hour.
 - The building shall be protected by an automatic sprinkler system installed according to NFPA 13, Standard for the Installation of Sprinkler Systems.
- Smokeless propellants not stored according to (a), (b) and (c) above shall be stored in a Type 4 magazine constructed and located according to Chapter 6.

Reprinted from NFPA495-85, Standard for the Manufacture, Transportation, Storage and Use of Explosive Materials, © 1985, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the NFPA on the referenced subject, which is represented by the Standard in its entirety.

The loads shown in this section should be followed just as they are printed. These loads are like recipes. The closer they are followed, the better the resultant load.

W A R N I N G

For all brands of powders use only the components shown. If the reloader makes any changes in components or gets new lot numbers, he should begin again with the starting loads and work up to maximum cautiously.

For those loads listed where a starting load is not shown, start 10% below the suggested maximum load and then approach maximums carefully, watching for any sign of pressure (difficult extraction, cratered and flattened or blown primers, and unusual recoil), **H110 Loads should not be reduced more than 3%.**

Reduce H110 Loads 3% and work up from there. H110 if reduced too much will cause inconsistent ignition. In some cases it will lodge a bullet in the barrel, causing a hazardous situation (Barrel Obstruction). This may cause severe personal injury or death to users or bystanders. **DO NOT REDUCE H110 LOADS BY MORE THAN 3%.**

H4831SC has the same ballistic performance as H4831.

NEVER Exceed the Loads Listed in This Publication

B R A N D S

BAR - Barnes
BER - Berger
BLX - Bull-X
FA - Freedom Arms
HDY - Hornady
NOS - Nosler
REM - Remington
SIE - Sierra
SFT - Swift
SPR - Speer
WIN - Winchester

P R I M E R S

LR - Large Rifle
LRM - Large Rifle Magnum
SR - Small Rifle
SRM - Small Rifle Magnum

D A T A
C - Compressed Powder Charge
PR - Primer
BBL - Barrel
COL - Cartridge Overall Length
REF - Reformed

B U L L E T S

A-Max - Hornady Match
BR - Bench Rest
BT - Ballistic Tip
FMC - Full Metal Case
FMJ - Full Metal Jacket
FMJBT - Full Metal Jacket Boat Tail
FN - Flat Nose
FP - Flat Point
FPJ - Full Plated Jacket
FS - Fail Safe
GC - Gas Check
GDHP - Gold Dot Hollow Point
GDSP - Gold Dot Soft Point
GS - Grand Slam
HB - Hollow Base
HC - Hollow Cavity
HP - Hollow Point
HPBT - Hollow Point Boat Tail
HSP - Hollow Soft Point
JFP - Jacketed Flat Point
JHC - Jacketed Hollow Cavity
JHP - Jacketed Hollow Point
JRN - Jacketed Round Nose
JSP - Jacketed Soft Point
JSWC - Jacketed Semi-Wadcutter
LBBWC - Lead Bevel Base Wadcutter
LFP - Lead Flat Point
LHBWC - Lead Hollow Base Wadcutter
LRN - Lead Round Nose
LSWC - Lead Semi-Wadcutter
MK - Match King
MT-SP - Mag Tip Soft Point
PSPCL - Pointed Soft Point "Core-Lokt"
RN - Round Nose
SB - Solid Base
SJ - Short Jacket
SP - Soft Point, Spitzer, Spire Point
SPBT - Soft Point Boat Tail
ST - Silvertip
TMJ - Totally Metal Jacket
UCHP - Uni-cor Hollow Point
WC - Wadcutter
X - X Bullet
XFB - X Flat Base
XBT - X Boat Tail
XBTC - X Boat Tail Coated

Success...
Bob Hodgdon and his son Chris Hodgdon with their guide Mark Strickland in Alvin, Texas, using Hodgdon Varget Powder.



RIFLE DATA

BULLET	POWDER	GR	VEL	CUP
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303 BRITISH
BBL: 24"
CASE: REMINGTON
PR: FEDERAL 210

H414	53.0	2586
H380	49.0	2509
BL-C(2)	45.0	2421
H335	46.0	2470
H4895	46.0	2501
H322	44.0	2555

150 GR. HDY SP COL: 3.035"
H4831 49.0 2295
H4350 48.0 2501
H414 48.0 2482
H380 44.0 2443
H335 48.0 2729
H4895 42.0 2479

180 GR. SIE SP COL: 3.075"
H4831 47.0 2238
H4350 46.0 2333
H414 46.0 2304
H380 42.0 2276
H335 41.0 2323
H4895 40.0 2295

32 WINCHESTER SPECIAL
CASE: WINCHESTER
PR: CCI 200
BBL: 20"
COL: 2.560"

170 GR. SPR FP
BL-C(2) 32.0 1964
H335 32.0 1960
H4895 33.0 1941
H4198 27.0 2168

32-40 WINCHESTER
BBL: 24"
CASE: WINCHESTER
PR: REMINGTON 2 1/2

H4227	13.0	1367	18,000 CUP
H110	12.0	1376	19,200 CUP
LIL'GUN	9.3	1237	19,600 CUP

202 GR. POPE COL: 2.555"
H4227 14.0 1376 15,900 CUP
H110 13.0 1386 17,900 CUP
LIL'GUN 9.5 1264 20,100 CUP

204 GR. MILLER COL: 2.555"
H4227 13.5 1367 16,300 CUP
H110 13.0 1369 17,900 CUP
LIL'GUN 10.8 1310 20,100 CUP

8 X 57MM MAUSER
BBL: 24"
CASE: REMINGTON
PR: REMINGTON 9 1/2

150 GR. SIE SP COL: 3.050"
H4831 57.0 2452
H4350 54.0 2552
H414 56.0 2773
H380 54.0 2778
BL-C(2) 46.0 2553
H335 49.0 2744
H4895 50.0 2747
H322 46.0 2726
H4198 41.0 2848

170 GR. SPR SP COL: 2.890"
H4831 57.0 2418
H4350 54.0 2507

NEVER Exceed the Loads Listed in This Publication

RIFLE DATA

BULLET	POWDER	GR	VEL	CUP
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250 GR. SIE SPBT COL: 3.560"
H870 92.0 2524
H4831 83.0 2784
H4350 76.0 2724

357 MAGNUM (RIFLE)
BBL: 18.5"
CASE: WINCHESTER
PR: WINCHESTER SPM

158 GR. HDY XTP COL: 1.580"
H4227 16.0 1668 42,600 CUP
H110 16.7 1757 40,700 CUP
HS-6 9.5 1427 41,900 CUP
UNIVERSAL 6.3 1147 39,300 CUP
HP-38 6.9 1214 40,000 CUP
TITEGROUP 6.1 1184 41,900 CUP

180 GR. NOS PART COL: 1.575"
H4227 13.7 1325 40,900 CUP
H110 13.5 1381 39,100 CUP

35 REMINGTON
BBL: 24"
CASE: REMINGTON
PR: REMINGTON 9 1/2

180 GR. SPR FN COL: 2.470"
VARGET 40.5 2196 32,500 CUP
BL-C(2) 43.0 2147 32,300 CUP
H335 37.5 2111 33,600 CUP
H4895 39.0 2232 33,100 CUP
BENCHMARK 35.5 2034 32,300 CUP
H322 35.0 2104 33,100 CUP
H4198 32.0 2172 33,000 CUP

200 GR. HDY RN COL: 2.510"
VARGET 39.5 2139 33,300 CUP
BL-C(2) 41.5 2011 31,700 CUP
H335 37.0 2048 33,200 CUP
H4895 38.5 2110 32,300 CUP
BENCHMARK 35.5 1984 32,600 CUP
H322 33.8 1987 33,100 CUP
H4198 30.5 1999 31,700 CUP

356 WINCHESTER
BBL: 20"
CASE: WINCHESTER
PR: WINCHESTER LR

200 GR. SIE RN COL: 2.550"
BL-C(2) 50.0 2243
H335 49.0 2269
H4895 46.0 2338
H322 44.0 2340
H4198 40.0 2383

250 GR. HDY RN COL: 2.775"
BL-C(2) 48.0 2163
H335 46.0 2151
H4895 43.0 2128
H322 41.0 2106
H4198 37.0 2133

358 WINCHESTER
BBL: 26"
CASE: WINCHESTER
PR: WINCHESTER LR

220 GR. SPR FP COL: 2.565"
BL-C(2) 48.0 2461
H335 48.0 2464

NEVER Exceed the Loads Listed in This Publication

BULLET	POWDER	GR	VEL	CUP
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H414	53.0	2586
H380	49.0	2509
BL-C(2)	45.0	2421
H335	46.0	2470
H4895	46.0	2501
H322	44.0	2555

8MM REMINGTON MAGNUM
BBL: 24"
CASE: REMINGTON
PR: REMINGTON 9 1/2 M

180 GR. BAR XFB COL: 3.600"
H870 91.0 2939
H4831 80.0 3024
H4350 75.0 3007

220 GR. HDY SP COL: 3.600"
H870 90.0 2856
H4831 78.0 2871

338-06
BBL: 24"
CASE: REMINGTON (REF)
PR: CCI 200

200 GR. BAR XFB COL: 3.340"
H4350 65.0 2710
H414 63.0 2802

250 GR. SIE SPBT COL: 3.340"
H4831 61.0 2408
H4350 60.0 2569
H414 60.0 2583

338 WINCHESTER MAGNUM
BBL: 24"
CASE: WINCHESTER
PR: WINCHESTER LRM

185 GR. BAR XBT COL: 3.280"
H4831 74.0 2969 52,600 CUP
H4350 68.5 2971 51,600 CUP
H414 67.5 2946 52,000 CUP
H380 67.0 2943 52,700 CUP
VARGET 57.0 2841 52,400 CUP
H4895 58.5 2886 52,000 CUP

210 GR. NOS PART COL: 3.280"
H4831 75.5 C 2888 52,300 CUP
H4350 70.0 2855 51,800 CUP
H414 67.0 2848 51,800 CUP
H380 66.0 2797 53,000 CUP
VARGET 58.5 2784 52,500 CUP
H4895 60.0 2788 53,000 CUP

250 GR. HDY SP COL: 3.340"
H1000 76.0 C 2622 46,500 CUP
H4831 71.5 C 2655 52,300 CUP
H4350 67.5 2657 51,900 CUP
H414 65.0 2622 52,900 CUP

340 WEATHERBY MAGNUM
CASE: WEATHERBY
BBL: 26"
PR: FEDERAL 215

200 GR. SPR SP COL: 3.560"
H4831 90.0 3040
H4350 80.0 2994

BULLET	POWDER	GR	VEL	CUP
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H4198	41.0	2502
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250 GR. HDY RN COL: 2.775"
BL-C(2) 48.0 2374
H335 46.0 2299
H4198 39.0 2312

35 WHELEN
BBL: 24"
CASE: REMINGTON
PR: REMINGTON 9 1/2

200 GR. SIE RN COL: 3.050"
H380 61.0 2602 45,000 CUP
VARGET 57.0 2653 42,300 CUP
BL-C(2) 63.0 2807 49,000 CUP
H335 55.0 2684 50,000 CUP
H4895 57.0 2689 49,000 CUP
H322 56.0 2691 48,500 CUP

250 GR. HDY SP COL: 3.220"
H380 59.0 2416 44,500 CUP
VARGET 55.0 2486 49,900 CUP
BL-C(2) 59.0 2503 48,900 CUP
H335 52.0 2404 50,000 CUP
H4895 53.0 2455 50,000 CUP
H322 52.0 2398 48,500 CUP

38-55 WINCHESTER
BBL: 24"
CASE: WINCHESTER
PR: CCI 200

255 GR. BAR JFP COL: 2.620"
H322 33.0 1830 28,200 CUP
H4198 28.0 1788 26,700 CUP

375 WINCHESTER
BBL: 24"
CASE: WINCHESTER
PR: WINCHESTER LR

220 GR. HDY JFP COL: 2.500"
H322 38.5 C 2236 48,900 CUP
H4198 34.0 2233 49,300 CUP

375 H & H MAGNUM
BBL: 24"
CASE: WINCHESTER
PR: FEDERAL 215 M

235 GR. SPR SP COL: 3.600"
H414 83.0 2749 42,600 CUP
H380 81.0 2835 46,800 CUP
VARGET 70.0 2819 51,200 CUP
BL-C(2) 85.0 2964 47,100 CUP
H335 74.0 2853 50,000 CUP
H4895 74.0 2895 50,400 CUP

270 GR. WIN FS COL: 3.600"
H4350 83.0 C 2694 46,800 CUP
H414 78.0 2576 45,500 CUP
H380 78.0 2632 46,600 CUP
VARGET 67.0 2620 51,600 CUP
H4895 68.0 2624 50,500 CUP

300 GR. SIE SPBT COL: 3.600"
H4350 81.5 C 2645 49,500 CUP
H414 78.0 2548 46,800 CUP
VARGET 62.0 2454 49,300 CUP
H4895 65.0 2505 50,400 CUP

RIFLE DATA

BULLET	POWDER	GR	VEL	CUP
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378 WEATHERBY MAGNUM CASE: WEATHERBY
BBL: 26" PR: FEDERAL 215

270 GR. HDY SP COL: 3.645"
 H4831 115.0 3102
 H4350 105.0 3091

300 GR. NOS PART COL: 3.680"
 H870 120.0 2620
 H4831 112.0 2926
 H4350 100.0 2940

416 REMINGTON MAGNUM CASE: REMINGTON
BBL: 24" PR: REMINGTON 9 1/2 M

350 GR. SPR SP COL: 3.590"
 VARGET 82.0 2622 52,400 CUP
 BL-C(2) 87.0 2580 44,700 CUP
 H335 82.0 2572 50,900 CUP
 H4895 80.0 2601 52,200 CUP

400 GR. HDY JRN COL: 3.560"
 H4350 88.0 C 2395 46,400 CUP
 H380 84.0 2367 48,500 CUP
 VARGET 77.0 2407 53,000 CUP
 BL-C(2) 83.0 2420 50,500 CUP
 H4895 76.0 2391 53,300 CUP

44-40 WINCHESTER CASE: WINCHESTER
BBL: 20" PR: WINCHESTER LP

200 GR. LEAD RNFP COL: 1.600"
 UNIVERSAL 7.3 1069 11,100 PSI
 HP-38 6.5 1020 12,400 PSI
 TITEGROUP 6.2 1117 12,900 PSI
 CLAYS 5.0 924 11,700 PSI

44 MAGNUM (RIFLE) CASE: WINCHESTER
BBL: 20" PR: REMINGTON 2 1/2

240 GR. NOS JHP COL: 1.600"
 H4227 24.0 1778 36,100 CUP
 H110 24.0 1817 36,200 CUP

270 GR. SPR GDSP COL: 1.600"
 H4227 22.5 1638 37,400 CUP
 H110 21.5 1637 37,700 CUP

300 GR. HDY XTP COL: 1.600"
 H4227 20.0 1452 38,600 CUP
 H110 19.0 1473 38,800 CUP

444 MARLIN CASE: REMINGTON
BBL: 24" PR: REMINGTON 9 1/2

240 GR. SIE JHP COL: 2.535"
 H335 56.0 2222 38,900 CUP
 H4895 53.0 C 2069 33,100 CUP
 BENCHMARK 55.0 C 2234 40,600 CUP
 H322 52.0 C 2185 35,900 CUP
 H4198 49.2 C 2499 42,100 CUP

265 GR. HDY JFP COL: 2.550"
 H335 56.0 2187 39,700 CUP
 H4895 53.0 C 2080 34,800 CUP

BULLET	POWDER	GR	VEL	CUP
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BENCHMARK 53.0 C 2139 40,700 CUP
 H322 52.0 C 2164 38,300 CUP
 H4198 47.0 2273 41,100 CUP

300 GR. SFT HP COL: 2.620"
 VARGET 50.0 C 1914 35,700 CUP
 H335 52.0 2023 42,300 CUP
 H4895 50.0 C 1931 35,600 CUP
 BENCHMARK 48.5 1993 41,900 CUP
 H322 48.0 2038 42,600 CUP
 H4198 42.5 2082 42,500 CUP

45-70 GOVERNMENT (TRAPDOOR RIFLE)
 CASE: WINCHESTER

BBL: 24" PR: CCI 200

300 GR. SIE HP COL: 2.525"
 VARGET 63.0 C 2020 23,800 CUP
 H335 63.5 2143 27,400 CUP
 H4895 62.0 C 1974 21,000 CUP
 BENCHMARK 63.5 C 2113 27,400 CUP
 H322 60.0 2142 28,000 CUP
 H4198 55.0 2221 27,600 CUP

405 GR. CAST LFP COL: 2.540"
 VARGET 50.0 1718 20,900 CUP
 H4895 48.0 1645 18,900 CUP
 BENCHMARK 50.0 1695 22,600 CUP
 H4198 31.0 1459 17,100 CUP

458 WINCHESTER MAGNUM CASE: WINCHESTER
BBL: 24" PR: CCI 250

350 GR. SPR SP COL: 3.105"
 H4895 80.0 C 2496 38,700 CUP
 BENCHMARK 79.0 C 2468 42,400 CUP
 H322 80.0 C 2589 49,400 CUP
 H4198 72.0 2548 51,600 CUP

400 GR. SFT SP COL: 3.220"
 VARGET 77.0 C 2310 38,800 CUP
 H4895 77.0 C 2349 42,500 CUP
 BENCHMARK 78.0 C 2343 46,600 CUP
 H322 76.0 C 2407 51,100 CUP
 H4198 67.0 2323 51,000 CUP

500 GR. HDY JRN COL: 3.310"
 VARGET 74.0 C 2152 48,100 CUP
 H335 75.5 2163 50,300 CUP
 H4895 74.0 C 2161 50,300 CUP
 BENCHMARK 73.0 C 2123 50,300 CUP
 H322 69.5 C 2109 52,000 CUP
 H4198 58.5 1987 51,100 CUP

460 WEATHERBY MAGNUM CASE: WEATHERBY
BBL: 26" PR: FEDERAL 215

400 GR. BAR XFB COL: 3.710"
 H4831 127.0 2565
 H4350 118.0 2610
 H414 117.0 2640
 H380 110.0 2593
 H4895 107.0 2589

RIFLE DATA

BULLET	POWDER	GR	VEL	CUP
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500 GR. HDY JRN COL: 3.710"

H4831 126.0 2469
 H4350 115.0 2508
 H414 116.0 2530
 H380 108.0 2483
 H4895 105.0 2478

50 BROWNING MACHINE GUN CASE: FNB
BBL: 45" PR: CCI 35

655 GR. ADI FMJ COL: 5.450"
 H50BMG 248.0 3029

750 GR. HDY A-MAX COL: 5.450"
 H50BMG 233.0 2800

800 GR. BAR SOLID COL: 5.450"
 H50BMG 225.0 2725



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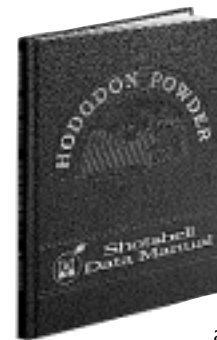
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