

## Material Safety Data Sheet

### Section 1. Product Information

<b>Product Name:</b>	<b>Herco® Smokeless Powder</b>
<b>MSDS Number:</b>	N/A
<b>Product ID#:</b>	N/A
<b>Preparation Date:</b>	Revised 05/11/2010
<b>Business Phone/Hours:</b>	540-639-8143
<b>Emergency Telephone #:</b>	540-639-7323
<b>24 Hr. Spill (Chemtrec):</b>	1-800-424-9300

### Section 2. Composition/Information On Ingredients

Component Name	Common Name	CAS Number
Nitroglycerin	NG	55-63-0
Ethyl Centralite	EC	85-98-3
Diphenylamine	DPA	122-39-4
Nitrocellulose	NC	9004-70-0
Rosin		8050-09-7

### Section 3. Hazard Identification

**Emergency Overview:**

**DANGER!** EXTREMELY FLAMMABLE - EXPLOSIVE.

ACCIDENTAL FIRE OR EXPLOSION IS LIKELY TO CAUSE SEVERE INJURY OR DEATH. DUST MAY CAUSE MODERATE TEMPORARY EYE, SKIN, RESPIRATORY, OR THROAT IRRITATION

<b>Eye:</b>	May cause eye irritation
<b>Skin:</b>	Absorption through the skin can cause severe headache. May cause allergic skin reaction (sensitization) in susceptible individuals.
<b>Ingestion:</b>	Ingestion may cause severe headache, nausea, vomiting, abdominal pain, fatigue, diarrhea, trembling, ringing in the ears.
<b>Inhalation:</b>	Inhalation of dust or vapor can cause severe headache. Avoid breathing dust, vapor, or mist.
<b>Exposure Symptoms:</b>	Irritation

<b>Cancer Information:</b>	<b>NTP:</b> NA	<b>OSHA:</b> NA	<b>IARC:</b> NA
----------------------------	----------------	-----------------	-----------------

## Section 4. First Aid Measures

<b>Eyes:</b>	Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get immediate medical attention.
<b>Skin:</b>	Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Render unusable and discard contaminated shoes and leather articles.
<b>Ingestion:</b>	Do Not Induce vomiting. Call a physician or poison control center immediately. NEVER give anything by mouth to an unconscious person. NEVER induce vomiting in an unconscious person.
<b>Inhalation:</b>	Remove to fresh air. If breathing is difficult, give oxygen. Get immediate medical attention.
<b>Doctor Notes:</b>	NA

## Section 5. Fire Fighting Measures

<b>Flammable Properties:</b>	Flammable EVACUATE AREA IMMEDIATELY. DO NOT fight fire.
<b>Hazardous Decomposition Products:</b>	Oxides of carbon and nitrogen, trace metal oxides.
<b>Extinguishing Media:</b>	Deluge with large quantities of water as quickly as possible by automatic sprinklers or fire hose from a protected location.
<b>Protective Equipment:</b>	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire clothing (includes fire fighting helmet, coat, pants, boots, and gloves).
<b>Unusual Fire and Explosion Hazards:</b>	Explosive hazard, may detonate under the right conditions.

## Section 6. Accidental Release Measures

<b>Spills and Leaks:</b>	Cleanup spills with a soft bristle brush and conductive rubber pan or rubber shovel. Use conductive containers. Avoid pinching material or metal to metal contact. Avoid sharp objects, sand, glass, grit or other material that sensitizes explosives.
<b>Waste Disposal:</b>	Disposal (if explosive) should be carried out under the direct supervision of a qualified person. For industrial disposal, federal hazardous waste regulation allows open burning of explosive waste in permitted facilities. Check with Local authorities before disposal.

## Section 7. Handling Information

DO NOT PRESSURIZE OR EXPOSE CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION

Follow appropriate D.O.D., N.F.P.A. and B.A.T.F. explosive safety measures. Local ordinances may apply.

For handling and storage requirement see 29 CFR 1910.109.

Avoid exposure to sunlight or artificial ultraviolet light.

Do not keep deteriorated or salvaged powders. Check old powders for deterioration regularly.

Destroy deteriorated powders immediately.

## Section 8. Exposure Control Measures / Personal Protection

Component Name	%	CAS #	Applicable Exposure Limits
Nitroglycerin	4.0 – 40%	55-63-0	OSHA – 0.2 ppm (Skin*) ACGIH - 0.05 ppm TLV (Skin*)
Nitrocellulose	Remainder	9004-70-0	Not Established
Diphenylamine	0 – 1%	122-39-4	ACGIH Threshold Limit Value (TLV): 10 mg/m <sup>3</sup> OSHA (TWA) 10 mg/m <sup>3</sup>
Ethyl Centralite	0 – 1%	85-98-3	NA
Rosin	0 – 4%	8050-09-7	NA

<b>Engineering Controls:</b>	Prevent build-up of static electric charges. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposures limits. Discharge from the ventilation system should comply with applicable air pollution control regulations.
------------------------------	---

<b>Respiratory Protection:</b>	Appropriate respiratory protection is required to reduce airborne contaminants, which may exceed acceptable limits. Respirators should be selected and used in accordance with OSHA, Subpart I (29 CFR 1910.134) and manufacturer's recommendations.
--------------------------------	--

<b>Hand Protection:</b>	Impervious gloves
<b>Eye Protection:</b>	Safety glasses
<b>Hygiene Controls:</b>	Avoid contact with eyes, skin and clothing. Avoid breathing dust, vapor, or mist. Handle in areas with adequate ventilation. Wash thoroughly after handling, and before eating, drinking, or smoking Avoid contamination of food, beverages, or smoking materials. Remove contaminated clothing promptly and clean thoroughly before reuse.

## Section 9. Physical And Chemical Properties

<b>Boiling Point:</b>	NA	<b>Solubility:</b>	Negligible at 20°C
-----------------------	----	--------------------	--------------------

<b>Melting Point:</b>	NA	<b>Specific Gravity:</b>	1.5 (approximate)
<b>Vapor Pressure:</b>	Negligible at 20°C	<b>pH:</b>	NA
<b>Vapor Density:</b>	NA	<b>Odor:</b>	NA
<b>Flash Point:</b>	NA	<b>Appearance:</b>	Small black/gray flakes
<b>Ignition Temp.:</b>	NA		
<b>UEL:</b>	NA		
<b>LEL:</b>	NA		

## Section 10. Stability and Reactivity

<b>Stability:</b>	Stable under recommended handling and storage conditions. Material is sensitive to friction, shock, impact, and electrostatic discharge.
-------------------	--

<b>Incompatibilities:</b>	Acids, oxidizing agents, alkalis and amines and strong sunlight or ultraviolet light.
<b>Conditions to Avoid:</b>	Avoid storing product near incompatible materials. Do not store near flammable materials. Do not keep deteriorated or salvaged product. Keep away from heat, flame sparks and other ignition sources. Do not store in direct sunlight or expose to UV radiation

<b>Hazardous Decomposition Products:</b>	None anticipated under normal or recommended handling and storage conditions.
--	---

## Section 11. Toxicological Information

Component - Diphenylamine: Excessive exposure to dust by inhalation has been reported to cause bladder damage, rapid heartbeat, increased blood pressure, and skin rash.

Component - Nitroglycerin: **WARNING!** Inhalation may cause severe headache. Ingestion may cause severe headache and blood pressure lowering. Absorption through skin may cause severe headache. Repeated skin contact may cause allergic skin reaction (skin sensitization).

Medical conditions generally recognized as being aggravated by exposure:

Severe untreated anemia and glaucoma may be aggravated by extreme overexposure to nitroglycerin in the workplace. Aggravation of these conditions has never been reported as a consequence of workplace exposure but has been reported following protracted medicinal over dosage of nitroglycerin. Alcohol has been reported to intensify any adverse reaction to nitroglycerin.

Not listed as a carcinogen by National Toxicity Program (NTP); not regulated as a carcinogen by Occupational Safety and Health Administration (OSHA); not evaluated by International Agency for Research on Cancer (IRAC). Rats dosed for a lifetime showed a decrease in the number of mammary and pituitary tumors that usually occur.

CARCINOGENICITY/TERATOGENICITY INFORMATION

Reported Human Effects: The effects reported above are only ones that have been reported following workplace exposure. The following additional effects have been reported following medicinal usage or over usage: faintness, skin flush, palpitation, rapid heartbeat, dizziness, abdominal pain, retrosternal discomfort, muscle twitches, Heinz bodies (black spheres in red blood cells), methemoglobinemia, depression, confusion, skin irritation, and allergic skin reaction.

Not teratogenic in rats or rabbits. Inactive in dominant lethal mutagenicity test. No effect on fertility in reproduction test. At many times the dose that would be received following exposure at the TLV, methemoglobinemia and fibrous tissue formation in the bile ducts were seen. Testicular effects were seen in rats dosed for 3 months at over 20,000 times the dose a worker would receive working in the TLV. In lethal dose determination in rats, rapid breathing, poor muscle tone, raised hair and excessive activity were seen.

## Section 12. Ecological Data

No ecological studies were found on this product.

## Section 13. Disposal Considerations

Disposal of material should be in accordance with Federal, State and local regulations.

## Section 14. Transportation Information

<b>U.S. DOT Proper Shipping Name:</b>	Smokeless powder for small arms (100 pounds or less)
<b>UN ID No.:</b>	NA3178
<b>Class &amp; Division:</b>	4.1
<b>Packing Group:</b>	I

## Section 15. Regulatory Information

**OSHA:**

<b>TSCA:</b>	<b>Section 12(b) Listed: X</b>	<b>Unlisted:</b>	<b>Exempt:</b>

<b>CERCLA:</b>	<b>Reportable Quantity:</b> 25 pounds (based on nitroglycerin content)		
<b>SARA Title III:</b>			
<b>Section 302:</b>	<b>Chemical Name:</b> NA		
	<b>Threshold Planning Quantity:</b> NA		
	<b>Reportable Quantity:</b> 25 pounds (CERCLA RQ)		
<b>Section 311/312:</b>	<b>Hazard Class:</b>		
	<input checked="" type="checkbox"/> Acute <input checked="" type="checkbox"/> Chronic <input checked="" type="checkbox"/> Fire <input type="checkbox"/> Reactive <input checked="" type="checkbox"/> Sudden Release of Pressure		
<b>Section 313:</b>	<b>Chemical Name:</b>	<b>CAS Number/Category Code:</b>	<b>Weight %:</b>
	Nitroglycerin	55-63-0	4.0-40
	Diphenylamine	122-39-4	0.1

<b>Other:</b>	Wastes associated with the propellant portion of this product may be considered RCRA Hazardous Wastes (40 CFR Part 261) (a) because it is listed (P081) due to Nitroglycerin content
---------------	---

## Section 16. Information Sources

### Label Information:

## DANGER !

**FLAMMABLE/EXPLOSIVE**  
**KEEP AWAY FROM HEAT, SPARKS OR OPEN FLAME**  
**MAY CAUSE SKIN IRRITATION**

Residual dust may ignite.

Ingestion may cause nausea, omitting and possible loss of consciousness.

**FIRST AID:** In case of contact, immediately flush skin with water. Remove contaminated clothing and shoes. Call physician if irritation develops and persists.

**In case of spill:** Use soft natural bristle brush and conductive rubber or conductive plastic shovel and dispose accordingly.

**Read product-specific MSDS for more details**

### Abbreviation Key:

ACHIH:	American Conference of Governmental Industrial Hygienist
AICS:	Australian Inventory of Chemical Substances
AIHA WEEL:	American Industrial Hygienists Association - Workplace Environmental Exposure Level
ANSI:	American National Safety Institute
C:	Ceiling
CASRN:	Chemical Abstracts Service Registry Number
CERCLA:	Comprehensive Emergency Response, Compensation and Liability Act
DSL:	Domestic Substances List (Canadian)
EIECCS:	European Inventory of Existing Commercial Chemical Substances
HMIS:	Hazardous Materials Identification System
IARC:	International Agency for Research on Cancer
MITI:	Ministry of International Trade and Industry (Japanese)
N/A:	Not Applicable
NDSL:	Non-domestic Substances List (Canadian)

NFPA:	National Fire Prevention Association
NOR:	Not Otherwise Regulated
NTP:	National Toxicology Program
OSHA:	Occupational Safety and Health Administration
PEL:	Permissible Exposure Limit
RCRA:	Resource Conservation and Recovery Act
RQ:	Superfund Amendment Reauthorization Act
STEL:	Short Term Exposure Limit
TLV:	Threshold Limit Value (ACGIH)
TPQ:	Threshold Planning Quantity
TSCA:	Toxic Substances Control Act
TWA:	Time Weighted Average

**Disclaimer:**

Although the information contained in this material safety data sheet has been compiled from sources believed to be reliable, no warranty, guaranty or representation is made as to the accuracy or completeness of the information contained herein and no responsibility or liability is assumed regarding the suitability of this information for the user's intended purpose or the consequences of its use. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its obligations under any applicable federal, state, or local law or regulation.

Corporate MSDS Template Version I.doc  
ANSI Z-400.2003  
11/30/05