

MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Quickdraw Lift Charge™		DATE: 6/18/2009	
PRODUCT NUMBERS: Q531			
TRADE NAME: Quickdraw Lift Charge™ GENERAL USE: Rock fracturing projectile lift charge. CHEMICAL FAMILY: Black Powder PRODUCT DESCRIPTION: Shock tube initiated black powder charge in a 2oz plastic container. Black granular powder. No odor detectable.			
MANUFACTURER Global Pyrotechnic Solutions, Inc.(d/b/a:GPS,Inc.)		DISTRIBUTOR RockTek USA Ltd.	
ADDRESS (NUMBER, STREET, P.O. BOX) 10476 Sunset Drive		ADDRESS (NUMBER, STREET, P.O. BOX) 10476 Sunset Drive	
(CITY, STATE AND ZIP CODE) Dittmer, MO 63023	COUNTRY USA	(CITY, STATE AND ZIP CODE) Dittmer, MO 63023	COUNTRY USA
TELEPHONE NUMBER FOR INFORMATION / Customer Service 813-248-0573		TELEPHONE NUMBER FOR INFORMATION / Customer Service 813-248-0573	

	CHEMTEL 24-HOUR EMERGENCY TELEPHONE NUMBER North America Toll Free 1-800-255-3924 International 813-248-0585	
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SECTION 2 - HAZARDOUS INGREDIENTS

Hazardous Components	% (by Weight)	CAS #	EINECS #	Hazard Symbol	RISK PHRASES (Full Text Section 15)
Potassium nitrate	NR	7757-79-1	231-818-8	(+O)	R9
Charcoal	NR	7440-44-0	231-153-3	None	None
Sulfur	NR	77704-34-9	231-722-6	Xi	R36/37/38
Graphite	NR	7782-42-5	231-955-3	Xi	R36/37

NOTES: * This MSDS describes the composition of the lift charge only, the igniters and projectile charge are not part of the lift charge and are the subject of other MSDS's.

Warning: Product has limited shelf life. Manufacturer's recommendation is a 2 year shelf life. DO NOT USE EXPIRED OR DETERIORATED PRODUCT!!

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: **Product is highly flammable - explosive when confined!!!**

No exposure to chemical hazards is expected with normal handling of the packaged articles. Post firing fumes may cause discomfort in some individuals. **HAZARDOUS DECOMPOSITION PRODUCTS:** Nitrous Oxides (NOx) at low temperatures, Nitrogen (N2). Carbon Monoxide (CO). Ammonia (NH4). Carbon dioxide (CO2). Anemia and cardiovascular disease are aggravated by prolonged exposure. Workers should be in generally good health.

THIS SECTION APPLIES TO BOTH OPENED CARTRIDGES and IGNITED MATERIALS:

PREVENTION OF ACCIDENTS IN THE USE OF EXPLOSIVES:

The prevention of accidents in the use of explosives is a result of careful planning and observance of the best known practices. The explosives user must remember that he is dealing with a powerful force and that various devices and methods have been developed to assist him in directing this force. He should realize that this force, if misdirected, may either kill or injure both him and his fellow workers.

WARNING

All explosives are dangerous and must be carefully transported, handled, stored, and used following proper safety procedures either by or under the direction of competent, experienced persons in accordance with all applicable federal, state and local laws, regulations, or ordinances.

ALWAYS lock up explosive materials and keep away from children and unauthorized persons. If you have any questions or doubts as to how to use any explosive product, DO NOT USE IT before consulting with your supervisor, or the manufacturer, if you do not have a supervisor. If your supervisor has any questions or doubts, he should consult the manufacturer before use.

Black powder is a deflagrating explosive. It is very sensitive to flame and spark and can also be ignited by friction and impact. When ignited unconfined, it burns with explosive violence and will explode if ignited under even slight confinement.

Black powder is a powerful explosive, and ignition may cause severe physical injury, including death. All explosives are dangerous and must be handled carefully and used following approved safety procedures under the direction of competent, experienced persons in accordance with all applicable federal, state and local laws, regulation and ordinances.

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SECTION 3 - HAZARDS IDENTIFICATION Continued

POTENTIAL HEALTH EFFECTS

INHALATION:

Not a likely route of exposure. Capable of causing respiratory irritation; this is especially true of post-ignition residues.

SKIN:

Not a likely route of exposure. May cause irritation in sensitive individuals.

EYES:

Not a likely route of exposure. Exposure to post-firing dusts may cause irritation.

INGESTION:

Not a likely route of exposure. May cause gastrointestinal upset.

CARCINOGENICITY:

NTP? No	IARC MONOGRAPHS? No	OSHA REGULATED? No
CALIFORNIA, Prop.65? No	ESIS: No	

SECTION 4 - FIRST AID MEASURES

INHALATION:

If post-usage fumes are inhaled, remove to fresh air, obtain medical attention if breathing remains difficult.

EYES:

Remove contact lenses, then wash for 15 minutes with clean potable water lifting upper and lower lids occasionally. Seek medical attention if irritation persists.

SKIN:

Wash with plenty of soap and water. Seek medical attention if delayed dermatitis develops.

INGESTION:

Contact medical authorities immediately. Give water to drink. DO NOT INDUCE VOMITING UNLESS DIRECTED BY PHYSICIAN.

SECTION 5 - FIRE FIGHTING MEASURES

GENERAL HAZARDS:

Product will not mass explode if multiple devices are involved. DO NOT FIGHT EXPLOSIVES FIRES. Try to keep fire from reaching explosives. Isolate area. Guard against intruders. Black powder is a deflagrating explosive. It is very sensitive to flame and spark and can also be ignited by friction and impact. When ignited unconfined, it burns but will explode if ignited under even slight confinement.

EXTINGUISHING MEDIA:

Water, foam, dry chemical. Water may be used to cool and dilute product.

FIRE FIGHTING PROCEDURES:

Fight fires from a safe distance with hose apparatus by flooding packaging with water. Evacuate personnel to predetermined safe distance. Firemen may require breathing apparatus. ALL EXPLOSIVES: DO NOT FIGHT EXPLOSIVES FIRES. Try to keep fire from reaching explosives. Isolate area. Guard against intruders.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Black powder is a deflagrating explosive. It is very sensitive to flame and spark and can also be ignited by friction and impact. Electrical currents and discharges (static discharge) can cause ignition. RF energy can cause ignition. When ignited while unconfined, it burns with explosive violence and will explode if ignited under even slight confinement.

HAZARDOUS COMBUSTION PRODUCTS:

Carbon Monoxide, Carbon Dioxide, Sulfur Dioxide, nitrogen oxides, and Smoke. Detonation produces hazardous overpressures and shrapnel (if confined). Gases produced may be toxic if exposed in areas with inadequate ventilation.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Use appropriate personal protective equipment. Isolate area and remove sources of friction, impact, heat, low level electrical current, electrostatic or RF energy. Only competent, trained, experienced persons should be involved in clean up procedures. Carefully pick up spills with non-sparking and non-static producing tools. For large spills, isolate area and notify hazardous materials authorities; do not attempt to clean up a large spill.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

- Keep away from friction, impact, electrical and RF energy, and heat and open flame. Do not consume food, drink, or tobacco in areas where they may become contaminated with these materials.
- Contaminated equipment must be thoroughly water cleaned before attempting repairs.
- No smoking.

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SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

HAZARDOUS COMPONENTS	NIOSH				ACGIH		OSHA	
	TWA ppm	TWA mg/m3	STEL ppm	STEL mg/m3	TLV/TWA ppm	TWA mg/m3	PEL ppm	PEL mg/m3
Potassium nitrate	NE		NE		NE		NE	
Charcoal	NE	2*						
Sulfur	NE		NE		NE		NE	
Graphite		2.5*		1250 IDLH		2*		2.5*
* As Respirable Dust								

PERSONAL PROTECTION

RESPIRATORY PROTECTION:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

PROTECTIVE GLOVES:

Wear suitable gloves when initiating and handling post ignition residuals.

EYE PROTECTION:

Wear appropriate protective safety glasses with side shield or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. The use of a transparent blast shield may be required under Federal regulations.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Wear appropriate protective clothing to prevent skin exposure. Hearing protection is also advised when product is used as intended.

WORK / HYGIENIC PRACTICES:

Avoid breathing fumes from initiation. Ground all handling and transferring operations. Use non-static utensils and tools while working with product, especially in dry conditions. Do not expose to heat, open flames, sparks or severe shock. Do not smoke while handling product. Do not eat or drink while handling product. Wash hands with soap and water after handling product.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR Black granular powder. No odor detectable.	VAPOR PRESSURE NA
pH 6.0-8.0	SPECIFIC GRAVITY (WATER = 1) 1.70-1.82(mercury method) 1.92-2.08 (pycnometer)
BOILING POINT / BOILING RANGE NA	SOLUBILITY IN WATER Soluble
FLASH POINT NE	VISCOSITY NA
FLAMMABLE LIMITS LEL: NE UEL: NE	VAPOR DENSITY (AIR = 1) NA
AUTOIGNITION TEMPERATURE NE	EVAPORATION RATE (WATER = 1) NA

SECTION 10 - STABILITY AND REACTIVITY

STABILITY STABLE X Stable under normal conditions of transport and storage. Individual devices may initiate when subjected to fire, supersonic shock or high-energy projectile impact. Multiple devices in close proximity with each other will not mass explode.	CONDITIONS TO AVOID: Keep away from heat, flame, ignition sources and strong shock. Do not attempt to disassemble.
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INCOMPATIBILITY (MATERIALS TO AVOID):

Black powder is hygroscopic and when wet, attacks all common metals except stainless steel. Black powder must be tested for compatibility with any material with which it may come into contact. Materials that may be incompatible include other explosives, solvents, adhesives, metals, plastics, paints, cleaning compounds, floor and table coverings, packing materials, and other similar materials, situations, and equipment.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS:

Nitrous Oxides (NOx) at low temperatures, Nitrogen (N2). Carbon Monoxide (CO). Ammonia (NH4). Carbon dioxide (CO2).

HAZARDOUS POLYMERIZATION:

Will not occur.

CONDITIONS TO AVOID:

None related to polymerization.

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SECTION 11 - TOXICOLOGICAL INFORMATION

Hazardous Components	CAS # EINECS #	LD50 of Ingredient (Specify Species and Route)	LC50 of Ingredient (Specify Species)
Potassium Nitrate	7757-79-1	Oral, rat: LD50 = 3540 mg/kg;	NE
	231-818-8		
Charcoal	77704-34-9	NE	NE
	231-153-3		
Sulfur	77704-34-9	NE	NE
	231-722-6		
Graphite	7782-42-5	NE	NE
	231-955-3		

SECTION 12 - ECOLOGICAL INFORMATION

Nitrogen compounds, including nitrates, are carefully monitored in wastewater and drinking water by the Environmental Protection Agency and state environmental agencies. Therefore, this product should generally not be placed in bodies of water or in sewers. When a hazardous materials incident requires that material be flushed into a sewer system or body of water (such as firefighting or spill cleanup), prompt notification of pertinent authorities must take place in order for remediation to begin. Failure to follow procedures for environmental notification and cleanup may result in sanctions from authorities.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: ONLY TRAINED AND QUALIFIED PERSONNEL SHOULD DISPOSE OF PRODUCT!!!
 Disposal is required by a licensed propellant and /or explosives disposal facility only and in accordance with all applicable local ,state and federal regulations governing disposal of Class 1.4C explosives. Disposal of explosives should be carried out under the direct supervision of a qualified person. For industrial disposal, federal hazardous waste regulations allow open burning of explosive wastes in permitted facilities. Burn in the open in an isolated location in small, shallow piles not over one inch deep. Stay upwind. Do not breathe products of combustion. State or local regulations may be more stringent than federal regulations. For disposal of small quantities, contact state or local environmental agencies for options. **DO NOT DISPOSE IN NORMAL TRASH RECEPTACLES!!**

SECTION 14 - TRANSPORT INFORMATION

PROPER SHIPPING NAME: Articles,explosive, n.o.s. (Black Powder) 1.4C, UN 0531 **EX#**
2009040200

DOT HAZARD CLASS / Pack Group: 1.4C/PGII REFERENCE: 49CFR UN / NA IDENTIFICATION NUMBER: UN 0531 LABEL: Explosives 1.4C HAZARD SYMBOLS:	IATA HAZARD CLASS / Pack Group: 1.4C, PGII Forbidden Passenger IMDG HAZARD CLASS: 1.4C Explosives, Oxidizer 5.1 RID/ADR Dangerous Goods Code: Explosives 1.4C UN TDG Class / Pack Group: UN-0531/PGII. Hazard Identification Number (HIN): NA
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Note: Transportation information provided is for reference only. Client is urged to consult CFR 49 parts 100 - 177, IMDG, IATA, EU, United Nations TDG, and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

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SECTION 15 - REGULATORY INFORMATION

TSCA (USA - Toxic Substance Control Act): Listed.

SARA TITLE III (USA - Superfund Amendments and Reauthorization Act):

Acute Health:	No	Chronic Health: No
Fire:	Yes	Sudden Release of Pressure: Yes
Reactive:	Yes	

313 REPORTABLE INGREDIENTS: This material contains Potassium Nitrate (listed as Water Dissociable Nitrate Compounds), (CAS#7757-791) which are subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

CERCLA (USA - None listed).

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986: None listed.







CPR (Canadian Controlled Products Regulations): Listed, WHMIS exempt (deflagrating explosive product).

IDL (Canadian Ingredient Disclosure List): Not listed.

DSL / NDSL (Canadian Domestic Substances List / Non-Domestic Substances List): Ingredients listed

EINECS (European Inventory of Existing Commercial Chemical Substances): Ingredients are referenced.

WGK Water Quality Index: 1

RISK PHRASES:	SYMBOL(S) REQUIRED FOR EU LABEL	SAFETY PHRASES:
<p>R3 : Extreme risk of explosion by shock, friction, fire or other sources of ignition.</p> <p>R9: Explosive when mixed with combustible material. swallowed.</p> <p>R36/37/38: Irritating to eyes ,respiratory system and skin.</p>	  <p>(+E):Explosive</p>   <p>(+F): Flammable</p>   <p>(+O): Oxidizer</p>	<p>S1/2 : Keep locked up and out of the reach of children.</p> <p>S3 : Keep in a cool place.</p> <p>S15 : Keep away from heat.</p> <p>S16 : Keep away from sources of ignition – no smoking.</p> <p>S24 : Avoid contact with skin.</p> <p>S26 : In case of contact with eyes, rinse immediately with plenty of water and seek medical attention.</p> <p>S27 : Take of immediately all contaminated clothing.</p> <p>S28 : After contact with skin, wash immediately with plenty of soap and water.</p> <p>S33 : Take precautionary measures against static discharges.</p> <p>S35 : This material and its container must be disposed of in a safe way.</p>

SECTION 16 - OTHER INFORMATION

Legend: ND=Not Determined, NE=Not established, NR= Not referenced, NA= Not applicable.

HMIS HAZARD RATINGS	HEALTH:	2	0 = INSIGNIFICANT
	FLAMMABILITY:	4	1 = SLIGHT
	PHYSICAL HAZARD:	2	2 = MODERATE
	PERSONAL PROTECTIVE EQUIPMENT:	B	3 = HIGH
			4 = EXTREME

REVISION SUMMARY: Revised to GHS/EU protocols 06/18/2009 New Issue. JTV.

MSDS Prepared by:
 ChemTel Inc.
 1305 North Florida Avenue
 Tampa, Florida USA 33602-2902
 Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573
 Website: www.chemtelinc.com



The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.