



**SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION**

<b>PRODUCT NAME:</b> 12ga Star Flash Aerial Diversion		<b>DATE:</b> August 26, 2008	
<b>PRODUCT NUMBER(S):</b> 3019-12ga			
TRADE NAME: 3019 - 12 ga Star Flash		 <b>DEFENSE TECHNOLOGY</b>	
GENERAL USE: Aerial Diversion			
CHEMICAL FAMILY: Metal, Black Powder, Oxidizer Blend			
PRODUCT DESCRIPTION: Brass, brass plated steel or nickel/zinc plated steel base with brown plastic tube cartridge. Odorless.			
MANUFACTURED FOR: <b>Safariland LLC</b>		DATE PREPARED: August 26, 2008 SUPERSEDES: November 1, 2006	
ADDRESS (NUMBER, STREET, P.O. BOX) <b>13386 International Parkway</b>		TELEPHONE NUMBER FOR INFORMATION / Customer Service <b>904-741-5400</b>	
(CITY, STATE AND ZIP CODE) <b>Jacksonville, FL 32218</b>		COUNTRY <b>USA</b>	
		<b>CHEMTEL 24-HOUR EMERGENCY TELEPHONE NUMBER</b>  <b>1-800-255-3924</b> <b>01-813-248-0585</b> North America Toll Free      International	

**SECTION 2 - HAZARDOUS INGREDIENTS**

Hazardous Components	% (by Weight)	CAS #	EINECS #	Hazard Symbol	RISK PHRASES (Full Text Section 15)
Titanium		7440-32-6	231-142-3	None	None
Iron		7439-89-6	231-096-4	None	None
Ferro Tungsten		12604-57-8	NR	None	None
Propellant: Charcoal		16291-96-6	240-383-3	None	None
Sulfur		7704-34-9	231-722-6	(+F)	None
Potassium Nitrate		7757-79-1	231-818-8	(+O)	None
Potassium Perchlorate		7778-74-7	231-912-9	(+O),(+Xn)	R9, R22
Graphite		7782-42-5	231-955-3	None	None

Notes:

**SECTION 3 - HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW**  
 Individual cartridges may ignite if the primer is struck or if the cartridge is exposed to excess heat.  
 Oxides of Barium, Lead, Antimony, Aluminum, Magnesium, Nitrogen, Carbon, and Sulfur. Lead and Antimony fumes may also be produced on thermal decomposition.

**POTENTIAL HEALTH EFFECTS**  
**INHALATION:**  
 Inhalation of gases and particulates produced while firing ammunition may result in mild throat, eye, upper respiratory and lung irritation. Contact with large volumes of smoke may cause minor eye irritation.

**SKIN:**  
 Unlikely, given the shotgun cartridge packaging of this product.

**EYES:**  
 Smoke may cause minor eye irritation.

**INGESTION:**  
 Unlikely, given the shotgun cartridge packaging of this product. Deliberate swallowing will cause severe gastrointestinal upset.

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

**SECTION 4 - FIRST AID MEASURES**

**INHALATION:**  
 Remove person to fresh air. Seek medical attention.

**EYES:**  
 If foreign body is suspected, wash eyes in fresh water for 15 min, contact physician

**SKIN:**  
 Wash exposed areas thoroughly with soap and water.

**INGESTION:**  
 Ingestion is not a likely route of exposure, In this case, contact physician.

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**SECTION 5 - FIRE FIGHTING MEASURES**

**GENERAL HAZARDS:**  
 Individual cartridges may ignite if the primer is struck or if the cartridge is exposed to excess heat.  
 Oxides of Barium, Lead, Antimony, Aluminum, Magnesium, Nitrogen, Carbon, and Sulfur. Lead and Antimony fumes may also be produced on thermal decomposition.

**EXTINGUISHING MEDIA:**  
 Water, CO2, dry chemical or dirt.

**FIRE FIGHTING PROCEDURES:**  
 Wear full fire-fighter protective gear including face shield or SCBA. Use water to cool ordinary combustibles below ignition temperature. Use fog pattern nozzle to stop any velocity fragments.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**  
 May ignite if heated to 250 degrees F, independent of air, unconfined ignited cartridges can produce low velocity metallic fragments, which may cause eye injury or superficial wounds if unprotected by standard fire-fighter turnout gear.

**HAZARDOUS COMBUSTION PRODUCTS:**  
 Oxides of Barium, Lead, Antimony, Aluminum, Magnesium, Nitrogen, Carbon, and Sulfur. Lead and Antimony fumes may also be produced on thermal decomposition.

**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:**  
 Avoid conditions detailed in Section 5. If container should rupture, place all loose cartridges from the broken shipping cases into a sturdy container. Secure container carefully.

**SECTION 7 - HANDLING AND STORAGE**

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:**  
 Store in a cool, dry area in the original container to assure performance. Keep out of reach of children.  
 Avoid striking the primer of unchambered cartridges.  
 Remove ammunition from service if any of the following conditions have occurred:

1. Prolonged storage at or above 200 degrees F,
2. Evidence of corrosion,
3. Physical damage,
4. Exposure to oil or spray type lubricants.

Avoid prolonged storage in leather carriers. Cartridges can ignite if heated to 250 degrees F independent of air.

**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
<b>Titanium</b>	NE		NE		NE		NE	
<b>Iron</b>	NE		NE		NE		NE	
<b>Ferro Tungsten</b>	NE		NE		NE		NE	
<b>Propellant: Charcoal</b>		2 *			NE		NE	
<b>Sulfur</b>	NE		NE		NE		NE	
<b>Potassium Nitrate</b>	NE		NE		NE		NE	
<b>Potassium Perchlorate</b>	NE			NE	NE		NE	
<b>Graphite</b>		2.5*		1250 IDLH		2*		2.5*

\* As Respirable Dust.

**PERSONAL PROTECTION**

**RESPIRATORY PROTECTION:**  
 Use an approved respirator while cleaning range facilities. Consult OSHA 1910.1025 or European standard EN149 for requirements

**PROTECTIVE GLOVES:**  
 Impermeable gloves are recommended when handling quantities of cartridges or during firing of these.

**EYE PROTECTION:**  
 Safety Glasses conforming to ANSI Z-87.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:**  
 Ear Protection required while discharging cartridges.

**WORK / HYGIENIC PRACTICES:**  
 None applicable.

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** 12ga Star Flash Aerial Diversion  
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## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

<b>APPEARANCE AND ODOR</b> Brass, brass plated steel or nickel/zinc plated steel base with brown plastic tube cartridge. Odorless.	<b>VAPOR PRESSURE</b> NA
VOC    NA    Volatility    NA	<b>SPECIFIC GRAVITY (WATER = 1)</b> NA
<b>BOILING POINT / BOILING RANGE</b> NA	<b>SOLUBILITY IN WATER</b> Partially soluble.
<b>FLASH POINT</b> NA	<b>VISCOSITY</b> NA
<b>FLAMMABLE LIMITS</b> LEL: NA                      UEL: NA	<b>VAPOR DENSITY (AIR = 1)</b> NA
<b>AUTOIGNITION TEMPERATURE</b> Ignites at 250°F	<b>EVAPORATION RATE BUTYL ACETATE = 1)</b> NA

## SECTION 10 - STABILITY AND REACTIVITY

<b>STABILITY</b> STABLE <b>X</b>	<b>CONDITIONS TO AVOID:</b> Individual cartridges may ignite if the primer is struck or if the cartridge is exposed to excess heat.
<b>INCOMPATIBILITY (MATERIALS TO AVOID):</b> Oils, Acids, Alkalies, Ammonia, and other corrosive materials.	
<b>HAZARDOUS DECOMPOSITION OR BYPRODUCTS:</b> Oxides of Barium, Lead, Antimony, Aluminum, Magnesium, Nitrogen, Carbon, and Sulfur. Lead and Antimony fumes may also be produced.	
<b>HAZARDOUS POLYMERIZATION:</b> Will not occur.	<b>CONDITIONS TO AVOID:</b> None related to polymerization.

## SECTION 11 - TOXICOLOGICAL INFORMATION

Hazardous Components	CAS # EINECS #	LD50 of Ingredient (Specify Species and Route)	LC50 of Ingredient (Specify Species)
Titanium	7440-32-6	NE	NE
	231-142-3		
Iron	7439-89-6	Oral, rat: LD50 = 30 gm/kg.	NE
	231-096-4		
Ferro Tungsten	12604-57-8	NE	NE
	NR		
Propellant: Charcoal	16291-96-6	NE	NE
	240-383-3		
Sulfur	7704-34-9	NE	NE
	231-722-6		
Potassium Nitrate	7757-79-1	Oral, rabbit: LD50 = 1901 mg/kg Oral, rat: LD50 = 3540 mg/kg	NE
	231-818-8		
Potassium Perchlorate	7778-74-7	NE	NE
	231-912-9		
Graphite	7782-42-5	NE	NE
	231-955-3		

## SECTION 12 - ECOLOGICAL INFORMATION


Nitrate and Perchlorate content are capable of leaching from wetted cartridges and present water pollution potential. Keep cartridges in a cool dry place and do not discard to watercourses. No other specific ecological information is available for this blended product.

## SECTION 13 - DISPOSAL CONSIDERATIONS

**WASTE DISPOSAL METHOD:**  
 Contact Manufacturer - Product Service. Generally disposal should be by a licensed and permitted ammunition disposal facility in accordance with all Federal, State, and Local regulations governing the disposal of ammunition.

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**SECTION 14 - TRANSPORT INFORMATION**

PROPER SHIPPING NAME: <b>Ammunition, Illuminating</b> (with or without burster).	
DOT HAZARD CLASS / Pack Group: <b>1.4G/PGII</b>	IATA HAZARD CLASS / Pack Group: <b>1.4G/PGII(Cargo Aircraft Only)</b> .
REFERENCE: 49CFR	IMDG HAZARD CLASS: <b>1.4G</b>
UN / NA IDENTIFICATION NUMBER: <b>UN 0297</b>	RID/ADR Dangerous Goods Code: <b>1.4G</b>
LABEL: <b>Explosives 1.4G , Oxidizer</b>	UN TDG Class / Pack Group: <b>UN 0297/PGII</b>
HAZARD SYMBOLS:	Hazard Identification Number (HIN): <b>546</b>
	

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.

**SECTION 15 - REGULATORY INFORMATION**

TSCA (USA - Toxic Substance Control Act):	<b>Ingredients listed.</b>
SARA TITLE III (USA - Superfund Amendments and Reauthorization Act):	
Acute Health:	<b>Yes</b>
Chronic Health:	<b>Yes</b>
Fire:	<b>Yes</b>
Sudden Release of Pressure:	<b>Yes</b>
Reactive:	<b>Yes</b>
<b>313 REPORTABLE INGREDIENTS:</b>	
CERCLA (USA - Comprehensive Response Compensation and Liability Act):	
California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986:	<b>None listed</b>
CCPR (Canadian Controlled Products Regulations):	<b>Listed</b>
CIDL (Canadian Ingredient Disclosure List):	<b>Listed</b>
CDSL / NDSL (Canadian Domestic Substances List / Non-Domestic Substances List):	<b>Ingredients listed on CDSL</b>
EINECS (European Inventory of Existing Commercial Chemical Substances):	<b>FerroTungsten (CAS#12604-57-8) not referenced.</b>
WGK Water Quality Index:	<b>1</b>

RISK PHRASES:	SYMBOL(S) REQUIRED FOR EU LABEL	SAFETY PHRASES:
<b>R9: Explosive when mixed with combustible material.</b> <b>R22: Harmful if swallowed.</b>	 (+E): Explosive (+O): Oxidizer (+Xn):Harmful	<b>S1/2: Keep locked up and out of the reach of children.</b> <b>S7/8 : Keep container tightly closed and dry.</b> <b>S22: Do not breathe dust.</b> <b>S27: Take off immediately all contaminated clothing.</b>

**SECTION 16 - OTHER INFORMATION**

<b>Legend:</b>			
N/A = Not Applicable	N/D = Not Determined	N/E = Not Established	N/R = Not Reported
HMIS HAZARD RATINGS	HEALTH:	<b>2</b>	0 = INSIGNIFICANT
	FLAMMABILITY:	<b>3</b>	1 = SLIGHT
	PHYSICAL HAZARD:	<b>1</b>	2 = MODERATE
	PERSONAL PROTECTIVE EQUIPMENT:	<b>C</b>	3 = HIGH
			4 = EXTREME

REVISION SUMMARY:  
 Revised to GHS/EU protocols 8/26/2008 supersedes 11/01/2006 issue. JTV

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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.