



# MATERIAL SAFETY DATA SHEET

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SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION					
<b>PRODUCT NAME:</b> Estes Model Rocket Igniter					
<b>PRODUCT NUMBER:</b>					
<b>TRADE NAME:</b> Estes Model Rocket Igniter					
<b>GENERAL USE:</b> Model Rocket Ignition					
<b>CHEMICAL FAMILY:</b> Insensitive Explosive / Oxidizer Mix					
<b>PRODUCT DESCRIPTION:</b> Vee-shaped device made of two chrome-colored wires approximately two inches (5 cm) long with a black tip of pyrogen. Wires may be spanned with tape. No odor..					
<b>MANUFACTURED FOR:</b> Estes-Cox Corp. d/b/a Estes Industries			<b>DATE PREPARED:</b> January 7, 2011		
<b>ADDRESS (NUMBER, STREET, P.O. BOX):</b> P.O. Box 227, 1295 H Street			<b>SUPERSEDES:</b> August 5, 2010		
<b>(CITY, STATE AND ZIP CODE):</b> Penrose, CO 81240			<b>TELEPHONE NUMBER FOR GENERAL INFORMATION:</b> 719-372-6565		
<b>COUNTRY:</b> USA			<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 - HAZARDS IDENTIFICATION					
<b>EMERGENCY OVERVIEW</b>					
<b>WARNING! THIS DEVICE CONTAINS A SMALL IGNITING CHARGE. KEEP AWAY FROM FIRE AND HEAT SOURCES. SEVERE MECHANICAL IMPACT MAY DEFORM PRODUCT.</b> Individual igniters may ignite if the unit is exposed to extreme heat as seen with fire conditions. Oxides of Nitrogen and Carbon, may be formed. Keep out of the reach of young children and pets. Adult supervision is strongly encouraged when product is used, especially by young children. Product contents are harmful by ingestion. Thermal burns may result from touching product during use.					
<b>POTENTIAL HEALTH EFFECTS</b>					
<b>INHALATION:</b> Normal handling of the unused product poses no exposure hazards. When the product is used, particles and vapors may be generated which may cause temporary slight irritation to the respiratory tract; this is a rare occurrence when the product is used as directed..					
<b>SKIN:</b> Unlikely to cause irritation to skin. Touching product while in use (igniting) may cause thermal burns.					
<b>EYES:</b> Unlikely to cause irritation to eyes; In unusual cases, particulates from used product may cause irritation.					
<b>INGESTION:</b> Ingestion of product is highly unlikely. Components of product are harmful and will cause irritation to gastro-intestinal tract.					
<b>CARCINOGENICITY:</b> No listings.					
SECTION 3 - HAZARDOUS INGREDIENTS					
Hazardous Components	% (wt)	CAS #	EINECS #	EU Hazard Symbol(s)	EU RISK PHRASES (Full Text Sections 15 & 16)
Potassium nitrate	NR	7757-79-1	231-818-8	Xn, O	R8, R36/37/38
Carbon	NR	7440-44-0	231-153-3	None	None
Cornstarch	NR	9005-25-8	232-679-6	None	None
Hide Glue	NR	NA	NA	None	None
<b>NOTES:</b> This Material Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200), the Canadian Workplace Hazardous Materials Information System (WHMIS), and European Union Directives. Hazard symbols and risk phrases are based on maximum listed concentration of each hazardous ingredient. Unlisted ingredients are not "hazardous" per the OSHA Hazard Communication Standard (29 CFR 1910.1200), the Canadian Workplace Hazardous Materials Information System (WHMIS) or the European (GHS) directives and are considered trade secrets under US Federal Law (29CFR and 40CFR), Canadian Law (Health Canada Legislation), and European Union Directives.					



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<b>PRODUCT NAME:</b>	Estes Model Rocket Igniter
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<b>SECTION 4 - FIRST AID MEASURES</b>	
<b>INHALATION:</b> If symptoms of lung irritation occur (coughing, wheezing or breathing difficulty), remove from exposure area to fresh air immediately. Get medical attention in the unusual event of severe distress.	
<b>EYES:</b> Remove contact lenses, then wash for 15 minutes with clean potable water lifting upper and lower lids occasionally. Seek medical attention if irritation persists.	
<b>SKIN:</b> Wash with plenty of soap and water; seek treatment for any thermal burns. Seek medical attention if delayed dermatitis develops (a rare condition).	
<b>INGESTION:</b> <b>Contact medical authorities immediately. Do not induce vomiting unless directed to do so by medical personnel.</b> If vomiting occurs naturally, have victim lean forward to avoid aspiration of regurgitant. Give 1-2 glasses of water to victim if victim is conscious and able to swallow and seek immediate medical assistance. Never give anything by mouth to an unconscious person. <b>Note to Physician:</b> This product contains small amounts of nitrates, which may produce methemoglobinemia. Methylene blue may be required for treatment in unusual cases. Treatment should be aimed at reducing methemoglobin levels, as well as providing respiratory and metabolic support.	
<b>SECTION 5 - FIRE FIGHTING MEASURES</b>	
<b>GENERAL HAZARDS:</b> Flammability Classification: (defined by 29 CFR 1910.1200) Class 1.4 Explosive. Can rapidly burn under fire conditions. Individual devices will randomly burn and. Product will not mass explode if multiple devices are involved. Burning material may produce toxic and irritating vapors. See Emergency Response Guidebook for further information. Mechanical impacts are highly unlikely to cause product to ignite, but strong electrical currents may cause ignition in unusual situations.	
<b>EXTINGUISHING MEDIA:</b> Where large quantities are affected, flood area with water; if fire is already consuming product, incident command should base fire-fighting decisions on capabilities and total quantity of product. If no water is available, carbon dioxide, dry chemical or earth may be used	
<b>FIRE FIGHTING PROCEDURES:</b> In case of fire, use normal fire fighting equipment. Protection concerns must also address the potential of the physical characteristic of this product as explosive. Quarantine area for fires involving igniters plus large quantities of engines	
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS:</b> If fire reaches a large quantity of product that is co-located with engines, consider a withdrawal of personnel to a safe distance. Evacuate all persons, including emergency responders from the area for at least 500 feet (1/10 mile) in all directions.	
<b>HAZARDOUS COMBUSTION PRODUCTS:</b> Carbon Monoxide, Carbon Dioxide, Nitrous Oxides	
<b>SECTION 6 - ACCIDENTAL RELEASE MEASURES</b>	
<b>STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:</b> Model rocket igniters are devices in a solid state. Simply pick up and place in containers approved for storage and transport. Wipe up any dust with wet cloths. <b>IF PRODUCT IS DAMAGED, DO NOT USE PRODUCT; DISCARD IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS. SEE SECTION 13.</b>	
<b>SECTION 7 - HANDLING AND STORAGE</b>	
<b>PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:</b> <b>HANDLING:</b> Product may burn if exposed to extreme heat. Do not smoke while handling product. <b>DO NOT ATTEMPT TO DISMANTLE PRODUCT!!</b> <b>STORAGE:</b> Avoid storage near extreme heat, ignition sources or open flame. Store at 32° - 140° F (0°-60° C). Store away from living quarters. <b>CONDITIONS TO AVOID:</b> Heat/flame/sparks, Severe mechanical impact (which may deform product, rendering it unsafe for use) .	



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<b>PRODUCT NAME:</b> Estes Model Rocket Igniter																
<b>PRODUCT NUMBER:</b>																
<b>SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION</b>																
<b>Hazardous Components</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">CAS #</th> <th style="width: 35%;">ACGIH Exposure Limits</th> <th style="width: 50%;">OSHA Exposure Limits</th> </tr> </thead> <tbody> <tr> <td>Potassium nitrate</td> <td>7757-79-1</td> <td>NE</td> </tr> <tr> <td>Carbon</td> <td>7440-44-0</td> <td>2.5 mg/m3 (respirable dust)</td> </tr> <tr> <td>Cornstarch</td> <td>9005-25-8</td> <td>5 mg/m3 (respirable nuisance dust)</td> </tr> <tr> <td>Hide Glue</td> <td>NA</td> <td>NE</td> </tr> </tbody> </table>	CAS #	ACGIH Exposure Limits	OSHA Exposure Limits	Potassium nitrate	7757-79-1	NE	Carbon	7440-44-0	2.5 mg/m3 (respirable dust)	Cornstarch	9005-25-8	5 mg/m3 (respirable nuisance dust)	Hide Glue	NA	NE
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<b>PERSONAL PROTECTION</b>																
<b>RESPIRATORY PROTECTION:</b> A vapor respirator may be advisable or required under emergency conditions.																
<b>PROTECTIVE GLOVES:</b> None generally required.																
<b>EYE PROTECTION:</b> Always follow the National Association of Rocketry (NAR) Model Rocketry Safety Code and all applicable laws and regulations.																
<b>OTHER PROTECTIVE CLOTHING OR EQUIPMENT:</b> Not required when product is used as directed by manufacturer.																
<b>WORK / HYGIENIC PRACTICES:</b> Avoid breathing fumes from ignition. Do not smoke while handling product; eating and drinking are also to be avoided.																
<b>SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES</b>																
<b>DESCRIPTION:</b> Vee-shaped wire device - no odor. See Notes.	<b>CONDITIONS TO AVOID:</b> Not applicable.															
<b>pH</b> Not applicable.	<b>SPECIFIC GRAVITY (WATER = 1)</b> Not applicable.															
<b>MELTING POINT</b> Not applicable.	<b>SOLUBILITY IN WATER</b> Insoluble - some components are soluble in water.															
<b>FLASH POINT</b> Not applicable.	<b>VISCOSITY</b> Not applicable.															
<b>FLAMMABLE LIMITS</b> LEL: None      UEL: None	<b>VAPOR DENSITY (AIR = 1)</b> Not applicable.															
<b>AUTOIGNITION TEMPERATURE</b> NR	<b>EVAPORATION RATE (WATER = 1)</b> Not applicable.															
<b>VOLATILE ORGANIC COMPOUND (VOC) INFORMATION</b> Not applicable.																
<b>NOTES:</b> Vee-shaped device made of two chrome-colored wires approximately two inches (5 cm) long with a black tip of pyrogen. Wires may be spanned with tape. No odor.																
<b>SECTION 10 - STABILITY AND REACTIVITY</b>																
<b>STABILITY:</b> Stable under normal temperatures and pressure.	<b>CONDITIONS TO AVOID:</b> Extreme heat; extreme mechanical impacts, strong electrical currents.															
<b>INCOMPATIBILITY (MATERIALS TO AVOID):</b> Acids, Class A & B explosives, strong oxidizers. Combustible or flammable liquids.																
<b>HAZARDOUS DECOMPOSITION OR BYPRODUCTS:</b> Carbon Monoxide, Carbon Dioxide, Nitrous Oxides under fire conditions only.																
<b>HAZARDOUS POLYMERIZATION:</b> Will not occur.	<b>CONDITIONS TO AVOID:</b> None related to polymerization.															
<b>SECTION 11 - TOXICOLOGICAL INFORMATION</b>																
<b>Complete Product</b>																
<b>Oral LD<sub>50</sub></b>	Product contents are harmful; ingestion of product by humans is unlikely.															
<b>Dermal LD<sub>50</sub></b>	Product is unlikely to cause skin irritation. Thermal burns may occur from handling product during use.															
<b>Inhalation LC<sub>50</sub></b>	Unused product is harmless. Vapors/particles from ignited product may be irritating.															
<b>Irritation</b>	Not a skin or eye irritant in unused form. Particulates and vapors from ignited product are possibly irritating to eyes and respiratory system in unusual cases.															



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<b>PRODUCT NAME:</b> Estes Model Rocket Igniter																
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<b>SECTION 11 - TOXICOLOGICAL INFORMATION Continued</b>																
<b>Product Components</b>																
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Hide Glue	NA	Not Established														
<b>SECTION 12 - ECOLOGICAL INFORMATION</b>																
No data is available on this product, but both unused and used igniters may be harmful if ingested by animals. Collection and careful disposal of spent igniters is highly advisable; simply discard with normal trash.																
<b>SECTION 13 - DISPOSAL CONSIDERATIONS</b>																
<b>WASTE DISPOSAL METHOD:</b> The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous. Damaged materials may pose a danger. To dispose of a small quantity of product, soak in water for at least 5 minutes, then dispose of remnants in an ordinary manner. Optionally, simply fire igniter and discard (do not hold igniter during firing). For large quantities, incineration in a licensed facility is preferable.																
<b>SECTION 14 - TRANSPORT INFORMATION</b>																
<b>DOMESTIC SHIPPING WITHIN THE USA</b>																
<b>PROPER SHIPPING NAME:</b> Flammable solid, organic, n.o.s. (Model rocket kits containing motors with or without un-installed igniters), UN 1325, Div. 4.1, PG II (CARGO AIRCRAFT ONLY if shipped by air)																
<b>DOT HAZARD CLASS / Pack Group:</b> Class 4.1 / PG II																
<b>REFERENCE:</b> DOT SP-7887																
<b>LABEL:</b> Flammable Solid or Explosives 1.4S																
<b>HAZARD SYMBOLS:</b> See notes for correct symbols																
<div style="display: flex; justify-content: space-around; align-items: center;"> </div>																
<b>INTERNATIONAL SHIPPING</b>																
<b>PROPER SHIPPING NAME:</b> Igniter, UN 0454, Div. 1.4S, PG II																
<b>IMDG HAZARD CLASS / Pack Group:</b> Class 1.4S (Category 05) EmS: F-B, S-X																
<b>IATA HAZARD CLASS / Pack Group:</b> Class 1.4S / PG II PG II (See Notes)																
<b>RID/ADR HAZARD CLASS / Pack Group:</b> Class 1.4S / PG II PG II, EAC=1Z																
<b>TDG (Canada) HAZARD CLASS / Pack Group:</b> Class 1.4S / PG II PG II																
<b>REFERENCE:</b> IMDG, IATA, RID/ADR, TDG																
<b>LABEL:</b> Explosive, Class 1.4S																
<b>HAZARD SYMBOLS:</b>																
<div style="display: flex; justify-content: space-around; align-items: center;"> </div>																
<b>UN / NA IDENTIFICATION NUMBER:</b> UN 0454																
<b>NOTES:</b> For igniters Not Contained in Engines and shipped under UN 0454, 25kg is the maximum load for passenger aircraft, 100 kg is the maximum for CAO.																
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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<b>PRODUCT NAME:</b> Estes Model Rocket Igniter							
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<b>SECTION 15 - REGULATORY INFORMATION</b>							
TSCA (USA - Toxic Substance Control Act): Components are listed under Section 8b.							
SARA TITLE III (USA - Superfund Amendments and Reauthorization Act):							
Acute Health: YES	Chronic Health: NO						
Fire: YES	Sudden Release of Pressure: NO						
Reactive: NO							
SARA 313 REPORTABLE INGREDIENTS: None							
CERCLA (USA - Comprehensive Response Compensation and Liability Act): Potassium Nitrate is CERCLA reportable.							
California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986: No listings.							
State Right To Know Laws: This product contains chemicals listed on the RTK Laws of CA, FL, MA, MI, MN, NJ, PA, & RI.							
CPR (Canadian Controlled Products Regulations): Exempt under WHMIS regulations as explosive.							
IDL (Canadian Ingredient Disclosure List): Components are listed in Section 2.							
DSL / NDSL (Canadian Domestic Substances List / Non-Domestic Substances List): Listed or exempt on both CDSL and NDSL.							
EINECS (European Inventory of Existing Commercial Chemical Substances): Referenced							
WGK Water Quality Index: NA for product.							
EUROPEAN (GHS) HAZARD SYMBOLS							
							
EU RISK PHRASES							
R8: Contact with combustible material may cause fire.							
R22: Harmful if swallowed.							
EU SAFETY PHRASES							
S1/2: Keep locked up and out of the reach of children.							
<b>SECTION 16 - OTHER INFORMATION</b>							
HMIS HAZARD RATINGS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">HEALTH:</td> <td style="width: 50%; text-align: center;">1</td> </tr> <tr> <td>FLAMMABILITY:</td> <td style="text-align: center;">3</td> </tr> <tr> <td>PHYSICAL HAZARD:</td> <td style="text-align: center;">1</td> </tr> </table>	HEALTH:	1	FLAMMABILITY:	3	PHYSICAL HAZARD:	1
HEALTH:	1						
FLAMMABILITY:	3						
PHYSICAL HAZARD:	1						
0 = INSIGNIFICANT, 1 = SLIGHT 2 = MODERATE, 3 = HIGH 4 = EXTREME	Personal Protective Equipment: See Section 8						
<b>Legend:</b> ACGIH - American Congress of Government Industrial Hygienists, CAS - Chemical Abstracts Service EINECS - European Inventory of Existing Commercial Chemical Substances HMIS - Hazardous Materials Identification System, IARC - International Agency for Research on Cancer NA - Not Available, ND - Not Determined, NE - Not Established, NR - Not Reported NIOSH - National Institute for Occupational Safety and Health, NTP - National Toxicology Program OSHA - Occupational Safety and Health Administration							
Full R-Phrases (Not listed in Section 15): R36/37/38 Irritating to eyes, respiratory system and skin.							
REVISION SUMMARY: Revised 1/4/2011 - LB.							
<b>MSDS Prepared by:</b> 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							
<small>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.</small>							