

Safety Data Sheet

according to 1907/2006/EC

Printing date: 16 October 2018

Revision: 16 October 2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking

· 1.1 Product identifier

· Trade name: **Estes Model Rocket Engines / Motors (≤ 30g propellant)**

· Other means of identification: No other identifiers

· 1.2 Relevant identified uses of the substance or mixture and uses advised against

· Application of the substance / the mixture:

Model Rocketry - Pyrotechnic article to propel a recoverable aeromodel.

· Uses advised against: No further relevant information available.

· 1.3 Details of the supplier of the Safety Data Sheet

· Manufacturer/Supplier:

Estes Industries, LLC

1295 H Street

Penrose, CO 81240

USA

(719) 372-6565

· 1.4 Emergency telephone number:

ChemTel Inc.

(800)255-3924 (North America)

+1 (813)248-0585 (International)

SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture

· Classification according to Regulation (EC) No 1272/2008

Expl. 1.4 H204 Fire or projection hazard.

· 2.2 Label elements

· Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

· Hazard pictograms



GHS01

· Signal word Warning

· Hazard statements

H204 Fire or projection hazard.

· Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P370+P380 In case of fire: Evacuate area.

P373 DO NOT fight fire when fire reaches explosives.

P374 Fight fire with normal precautions from a reasonable distance.

P401 Store in accordance with local/regional/national/international regulations.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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- **2.3 Other hazards** There are no other hazards not otherwise classified that have been identified.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· 3.2 Mixtures

· Components:

CAS: 7757-79-1 EINECS: 231-818-8 Reg.nr.: 01-2119488224-35-XXXX	Potassium nitrate	 Ox. Sol. 2, H272	60-80%
CAS: 7704-34-9 EINECS: 231-722-6 Index number: 016-094-00-1 Reg.nr.: 01-2119487295-27-XXXX	Sulfur	 Skin Irrit. 2, H315	10-20%
CAS: 16291-96-6 EINECS: 240-383-3 Reg.nr.: 01-2119560590-41-XXXX	charcoal	 Flam. Sol. 1, H228	10-20%

- **Additional information:** For the wording of the listed Hazard Statements refer to section 16.

SECTION 4: First aid measures

· 4.1 Description of first aid measures

- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
In case of minor burns, flush with cool water.
Seek immediate medical help for blistering or open wounds.
- **After eye contact:**
Unlikely route of exposure.
Seek medical treatment in case of complaints.
- **After swallowing:**
Unlikely route of exposure.
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.

· 4.2 Most important symptoms and effects, both acute and delayed

- Adverse health effects are not reasonably expected from normal use of product.

· 4.3 Indication of any immediate medical attention and special treatment needed

- Treat symptomatically.

SECTION 5: Firefighting measures

· 5.1 Extinguishing media

· Suitable extinguishing agents:

- Water in flooding quantities.

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- Fight fire with normal precautions from a reasonable distance.
- **For safety reasons unsuitable extinguishing agents:** None.
- **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information:**
Eliminate all ignition sources if safe to do so.
Cool endangered receptacles with water in flooding quantities.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Keep away from ignition sources.
- **6.2 Environmental precautions** Avoid release to the environment.
- **6.3 Methods and material for containment and cleaning up**
Pick up manually.
Send for recovery or disposal in suitable receptacles.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Keep out of reach of small children.
Handle with care.
Keep ignition sources away.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:**
Avoid storage near extreme heat, ignition sources or open flame.
Storage area should be dry and well-ventilated.
Protect from humidity and water.
Store at 32-140 °F / 0-60 °C.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **DNELs:** No further relevant information available.

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- **PNECs:** No further relevant information available.
- **8.2 Exposure controls**
- **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals. Information is only applicable to product contents, and not to product as normally supplied. This information is applicable to damaged, leaking, or spilled product as contact with contents is possible under these conditions.
- **Respiratory protection:** Not required under normal conditions of use.
- **Protection of hands:** Gloves not required under normal conditions of use.
- **Eye protection:** Not required under normal conditions of use.
- **Body protection:** Not required under normal conditions of use.
- **Limitation and supervision of exposure into the environment:**
No further relevant information available.
- **Risk management measures:** No further relevant information available.

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

- **Appearance**
 - **Form:** Kraft colored paper cylinders with grey nozzle at one end.
 - **Colour:** Light grey
- **Odour:** Sulfurous
- **Odour threshold:** Not determined.
- **pH-value:** Not applicable.
- **Melting point/freezing point:** Not determined.
- **Initial boiling point and boiling range:** Not determined.
- **Flash point:** Not applicable.
- **Flammability (solid, gas):** Fire or projection hazard.
- **Auto/Self-ignition temperature:** 282 °C
- **Decomposition temperature:** Not determined.
- **Explosive properties:** Not determined.
- **Explosion limits**
 - **Lower:** Not determined.
 - **Upper:** Not determined.
- **Oxidising properties:** Contains oxidizing agent.
- **Vapour pressure:** Not applicable.
- **Density:**
 - **Relative density:** Not determined.
 - **Vapour density:** Not applicable.
 - **Evaporation rate:** Not applicable.
- **Solubility in / Miscibility with water:** Partly soluble.

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- **Partition coefficient: n-octanol/water:** Not determined.
- **Viscosity**
 - Dynamic:** Not applicable.
 - Kinematic:** Not applicable.
- **9.2 Other information** No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity**

The product is non-reactive under normal conditions of use storage and transport.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.
Avoid temperatures above 140 °F / 60 °C.
- **10.3 Possibility of hazardous reactions**

Reacts with acids.
Flammable.
- **10.4 Conditions to avoid**

Excessive heat.
Sources of ignition: sparks, open flame, incompatible materials
- **10.5 Incompatible materials** Strong acids.
- **10.6 Hazardous decomposition products**

Carbon monoxide and carbon dioxide
Nitrogen oxides
Sulphur oxides (SO_x)

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.
- **LD/LC50 values relevant for classification:** None.
- **Primary irritant effect**
- **Skin corrosion/irritation:** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation:** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation:** Based on available data, the classification criteria are not met.

IARC (International Agency for Research on Cancer):

None of the ingredients are listed.

- **Probable routes of exposure:** Skin contact.
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

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SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
This statement was deduced from the properties of the single components.
Due to available data on eliminability/decomposition and bioaccumulation potential, a prolonged damage of the environment is unlikely.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
To dispose of a small quantity of product, soak in water for at least 24 hours, then dispose of remnants in an ordinary manner. For large quantities, contact manufacturer or incinerate.
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.

SECTION 14: Transport information

- | | |
|--|--|
| <ul style="list-style-type: none"> · 14.1 UN-Number · DOT · ADR, IMDG, IATA | <p>UN1325 (DOT SP-7887) or NA0323
UN0432</p> |
| <ul style="list-style-type: none"> · 14.2 UN proper shipping name · DOT · ADR, IMDG · IATA | <p>Flammable solids, organic, n.o.s. (Model rocket kits containing motors with or without un-installed igniters)
or
Model rocket motor
ARTICLES, PYROTECHNIC
Articles, pyrotechnic</p> |
| <ul style="list-style-type: none"> · 14.3 Transport hazard class(es) | |

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· DOT



· Class 4.1 or 1.4S
 · Label 4.1 or 1.4S

· ADR, IMDG, IATA



· Class 1.4S
 · Label 1.4S

· 14.4 Packing group

· DOT II
 · ADR, IMDG, IATA no packing group

· 14.5 Environmental hazards:

· Marine pollutant: No

· 14.6 Special precautions for user

· EMS Number: Not applicable.

· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable.

SECTION 15: Regulatory information

· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

· IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

· Directive 2012/18/EU

· Named dangerous substances - ANNEX I None of the ingredients are listed.

· Other regulations, limitations and prohibitive regulations

· Substances of very high concern (SVHC) according to REACH, Article 57

None of the ingredients are listed.

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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SECTION 16: Other information

· **Relevant phrases**

H228 Flammable solid.
H272 May intensify fire; oxidiser.
H315 Causes skin irritation.

· **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
Expl. 1.4: Explosives – Division 1.4
Flam. Sol. 1: Flammable solids – Category 1
Ox. Sol. 2: Oxidizing solids – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2

· **Sources**

Website, European Chemicals Agency (echa.europa.eu)
Website, US EPA Substance Registry Services (ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do)
Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)
Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6
Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.
Safety Data Sheets, Individual Manufacturers

SDS 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