AeroTech Division, RCS Rocket Motor Components, Inc.

Safety Data Sheet

Prepared in accordance with 29 CFR § 1910.1200 (g)

Section 1. Identification

Product identifier: Copperhead™ igniter, FirstFire™ igniter, FirstFire Jr.™ igniter.

Manufacturer: RCS Rocket Motor Components, Inc., 2113 W 850 N, Cedar City, UT 84721, 435-865-7100, emergency response number: Infotrac (352) 323-3500

Recommended use: Igniters for initiating hobby rocket motors.

Section 2. Hazard Identification

Hazard classification: Explosive 1.4S

Signal word: Flammable

Hazard statement: Igniters are flammable and may give off varying amounts of Hydrogen Chloride and Carbon Monoxide gas, soot and carbon fibers when burned.

Pictograms: 

Precautionary Statement: Do not smoke near igniters and keep away from open flames and other heat sources.

Description of any hazards not otherwise classified: N/A

Unknown toxicity statement: N/A

Section 3. Composition/Information on Ingredients

Chemical name: N/A

Common name and synonyms: Rocket motor igniter, initiator, starter.

Chemical Abstracts Service (CAS) number or other unique identifiers: N/A

Impurities and stabilizing additives: N/A

The chemical name and concentration of all ingredients: Igniters contain varying percentages of a composition of up to 50 milligrams of Ammonium or Potassium Perchlorate, carbon black and carbon fibers dispersed in a flammable binder with lesser amounts of proprietary ingredients such as burn rate modifiers and a powdered metal fuel.

Trade secret statement: The specific chemical identity and/or exact percentage (concentration) of composition of some ingredients has been withheld as a trade secret.

Section 4. First Aid Measures

Necessary first-aid instructions: If the pyrotechnic composition is ingested, induce vomiting and call a physician. If combustion products are inhaled, move to fresh air and call a physician if ill effects are noted. In the case of skin contact, wash area immediately and contact a physician if severe skin rash or irritation develops. For mild burns use a first aid burn ointment. For severe burns immerse the burned area in cold water at once and see a physician immediately.

Description of the most important symptoms or effects, and any symptoms that are acute or delayed: Coughing, tightness of chest in the case of inhalation, redness, blistering or charring of skin in the case of burns, upset stomach, vomiting, or diarrhea in the case of ingestion.

Recommendations for immediate medical care and special treatment needed, when necessary: If ingested, induce vomiting and call a physician. If combustion products are inhaled, move to fresh air and call a physician if ill effects are noted. In the case of skin contact, wash area immediately and contact a physician if severe skin rash or irritation develops. For mild burns use a first aid burn ointment. For severe burns immerse the burned area in cold water at once and see a physician immediately.

Section 5. Fire-Fighting Measures

Recommendations of suitable extinguishing equipment, and information about extinguishing equipment that is not

appropriate for a particular situation: Use water when fighting any pyrotechnic fire, foam and CO2 are ineffective.

Advice on specific hazards that develop from the chemical during the fire, such as any hazardous combustion products created when the chemical burns: Igniter pyrotechnic composition gives off Hydrogen Chloride and Carbon Monoxide gas, soot and carbon fibers when burned.

Recommendations on special protective equipment or precautions for firefighters: Full-face respirators recommended to prevent from inhaling toxic combustion byproducts.

Section 6. Accidental Release Measures

Personal precautions and protective equipment: N/A

Emergency procedures, including instructions for evacuations, consulting experts when needed, and appropriate protective clothing: N/A

Cleanup procedures: Put igniters back into shipping bags.

Section 7. Handling and Storage

Precautions for safe handling: Keep away from flames and other sources of heat. Do not smoke within 25 feet of product. Do not ingest. Do not breathe exhaust fumes. Keep in original packaging until ready for use.

Recommendations on the conditions for safe storage, including any incompatibilities: Store in a dry location, away from open flames and other heat sources. Do not store near acids.

Section 8. Exposure Controls/Personal Protection

OSHA Permissible Exposure Limits (PELs), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs): N/A

Appropriate engineering controls: Do not use igniters indoors.

Recommendations for personal protective measures to prevent illness or injury from exposure to chemicals: Do not use igniters indoors. Do not breathe exhaust fumes.

Any special requirements for PPE, protective clothing or respirators: N/A

Section 9. Physical and Chemical Properties

Appearance: Narrow copper foil strips or wires coated with a small amount of black igniter composition on one end, little or no odor.
Upper/lower flammability or explosive limits: Pyrotechnic composition ignites at 550 deg. F.
Odor: Slight.
Vapor pressure: N/A
Odor threshold: N/A
Vapor density: N/A
pH: N/A
Relative density: N/A
Melting point/freezing point: N/A
Solubility(ies): N/A
Initial boiling point and boiling range: N/A
Flash point: N/A
Evaporation rate: N/A
Flammability: Flammable.
Upper/lower flammability or explosive limits: N/A
Vapor pressure: N/A
Vapor density: N/A
Relative density: N/A
Solubility(ies): N/A
Partition coefficient: n-octanol/water: N/A
Auto-ignition temperature: 550 deg. F.
Decomposition temperature: 550 deg. F.
Viscosity: N/A

Section 10. Stability and Reactivity

Reactivity.

Description of the specific test data for the chemical(s): All available test data indicates that the product is stable at normal temperatures.

Chemical stability.

Indication of whether the chemical is stable or unstable under normal ambient temperature and conditions while in

storage and being handled: Product is stable at normal temperatures.

Other.

Indication of the possibility of hazardous reactions, including a statement whether the chemical will react or polymerize, which could release excess pressure or heat, or create other hazardous conditions. Also, a description of the conditions under which hazardous reactions may occur: Coating on tip of product autoignites at 550 deg. F.

List of all conditions that should be avoided: Open flames, smoking near product, acids, other heat sources.

List of all classes of incompatible materials: Acids, peroxides.

List of any known or anticipated hazardous decomposition products that could be produced because of use, storage, or heating: Oxides of carbon, Hydrogen Chloride, soot, carbon fibers, metal oxide fumes.

Section 11. Toxicological Information

Information on the likely routes of exposure: Inhalation, skin exposure, ingestion.

Description of the delayed, immediate, or chronic effects from short- and long-term exposure: Pyrotechnic coating on igniter tip is an irritant in the case of skin and eye contact, may be extremely hazardous in the case of ingestion, and may be toxic to kidneys, lungs and the nervous system. Symptoms include respiratory irritation, skin irritation, muscle tightness, vomiting, diarrhea, abdominal pain, muscular tremors, weakness, labored breathing, irregular heartbeat, and convulsions. Inhalation of large amounts of combustion products may produce similar but lesser symptoms as ingestion.

The numerical measures of toxicity: N/A

Description of the symptoms: Coughing, tightness of chest in the case of inhalation, redness, blistering or charring of skin in the case of burns, upset stomach, vomiting, or diarrhea in the case of ingestion.

Indication of whether the chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest editions) or found to be a potential carcinogen by OSHA: N/A

Section 12. Ecological Information

Data from toxicity tests performed on aquatic and/or terrestrial organisms: N/A

Potential for the chemical to persist and degrade in the environment either through biodegradation or other processes: Unknown.

Results of tests of bioaccumulation potential: N/A

The potential for a substance to move from the soil to the groundwater: Unknown.

Other adverse effects: There are concerns that perchlorate has the potential for thyroid problems in certain individuals.

Section 13. Disposal Considerations

Description of appropriate disposal containers to use: None. Igniters should be disposed of by burning.

Recommendations of appropriate disposal methods to employ: Discharge igniter at a safe distance using a 12 volt car battery or similar power source. The pyrotechnic coating on the igniter will burn until consumed. Dispose of spent igniter in an inert trash receptacle.

Description of the physical and chemical properties that may affect disposal activities: None anticipated.

Language discouraging sewage disposal: Do not dispose igniters in a sewer system.

Any special precautions for landfills or incineration activities: Do not dispose of igniters in landfills. Dispose by burning as described above.

Section 14. Transport Information

UN number: Varies according to the specific product.
UN proper shipping name: Varies according to the specific product.
Transport hazard class(es): Hazard class 1 or 4 depending on whether special permit DOT-SP 7887 is used.
Packing group number: II.
Environmental hazards: None.
Guidance on transport in bulk: None
Special precautions: None.

Section 15. Regulatory Information

Any national and/or regional regulatory information of the chemical or mixtures: Consult Federal Aviation Administration (FAA) regulations before using igniters to initiate flying rockets.

Section 16. Other Information

Date of preparation and last revision: December 5, 2023

CALIFORNIA USE ONLY
Perchlorate Material – special handling may apply. See:
www.dtsc.ca.gov/hazardouswaste/perchlorate