SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: Propellant M-14 MP F/120MM, M865 Alliant

APPEARANCE: solid  HMIS RATINGS
COLOR: dark green/dark grain color  HEALTH HAZARD: 2 moderate
black if coated with graphite  FLAMMABILITY HAZARD: 4 severe

ODOR: odorless  REACTIVITY HAZARD: 4 severe
CASRN: proprietary mixture

CHEMICAL DESCRIPTION: propellant

SECTION 2: HAZARDOUS COMPONENT INFORMATION

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS#</th>
<th>PEL/TLV</th>
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<tr>
<td>nitrocellulose</td>
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<tr>
<td>dibutylphthalate</td>
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<td>dinitrotoluene</td>
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<td>graphite</td>
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SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER!
Extremely flammable
Accidental firing or explosion is likely to cause severe injury or death.
Electrostatic charges generated by emptying package in or near flammable vapor may cause flash fire. May form flammable dust-air mixtures.
May cause skin irritation.
Ingestion may cause headache, insomnia, fatigue, nausea, vomiting, seizure, convulsions, and loss of consciousness.

SECTION 4: FIRST AID PROCEDURES

EYE: Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low pressure water for at least 15 minutes. Get immediate medical attention.

SKIN: Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Render unusable and discard contaminated shoes and leather articles.

INHALATION: Remove to fresh air. Give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

INGESTION: If conscious, drink large quantities of water. Induce vomiting. Call a physician or poison control center immediately. NEVER give anything by mouth to an unconscious person. NEVER induce vomiting in an unconscious person.
SECTION 5: FIRE HAZARD:

FIRE FIGHTING PROCEDURES: EVACUATE AREA IMMEDIATELY. DO NOT fight fire.

EXTINGUISHING MEDIA: Deluge with large quantities of water as quickly as possible by automatic sprinklers or fire hose from a protected location. Product is self-oxidizing.

CONDITIONS TO AVOID: Avoid impact, friction, heat, sparks, or flame. Avoid conditions that generate dust. This product may form flammable dust-air mixtures. Avoid emptying package in or near flammable vapors. Static charges may cause flash fire.

HAZARDOUS COMBUSTION PRODUCTS:
Combustion products include: carbon dioxide, nitrogen oxides, aldehydes, carboxylic acids, methane and hydrogen cyanide.

SECTION 6: ACCIDENTAL RELEASE MEASURES:
Clean up spills immediately using soft natural bristle brush and conductive rubber or conductive plastic shovel. Use caution; material is sensitive to initiation from sources such as heat, flame, shock, friction or sparks.

In case of accidental spill or release, refer to Section 8, Personal Protective Equipment and General Hygiene Practices.

SECTION 7: HANDLING AND STORAGE:

GENERAL MEASURES:
Electrically ground all equipment.
Blanket vessel with inert gas when emptying bags where flammable vapors may be present.
Electrically ground operator and pour material slowly into conductive, grounded chute.
DO NOT PRESSURIZE OR EXPOSE CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION
For handling and storage requirement see 29 CFR 1910.109.
Store in cool, dry place: approximately 68°F (20°C)
Store only in Department of Transportation approved containers.
Check old product for deterioration regularly.
Keep container closed when not in use.

MATERIALS OR CONDITIONS TO AVOID:
Avoid storing product near incompatible materials. See MSDS Section 10
Do not store near flammable materials.
Do not keep deteriorated or salvaged product.
Keep away from heat, flame sparks and other ignition sources.
Do not store in direct sunlight or expose to UV radiation.
SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL HYGIENIC PRACTICES:

Avoid contact with eyes, skin and clothing.
Avoid breathing dust, vapor, or mist.
Handle in areas with adequate ventilation.
Wash thoroughly after handling, and before eating, drinking, or smoking.
Avoid contamination of food, beverages, or smoking materials.
Remove contaminated clothing promptly and clean thoroughly before reuse.

PERSONAL PROTECTIVE EQUIPMENT:

Safety glasses
Impervious gloves
Appropriate respiratory protection is required to reduce airborne contaminants, which may exceed acceptable limits. Respirators should be selected and used in accordance with OSHA, Subpart I (29 CFR 1910.134) and manufacturer's recommendations.
Flame-retardant clothing
Static-free clothing
Wear conductive safety shoes.

WORK PRACTICES AND ENGINEERING CONTROLS:

Material is shock sensitive. Use care in handling.
Friction can cause ignition. Keep away from ignition sources.
Prevent build-up of static electric charges.
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Discharge from the ventilation system should comply with applicable air pollution control regulations.
DO NOT smoke in areas where powder is stored or used.
Eyewash fountains and safety showers should be easily accessible.

PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE:

Completely remove product from area, and thoroughly clean all equipment, piping, or vessel before beginning maintenance or repairs.
Eliminate ignition sources and prevent build-up of static electrical charges.
Use spark-proof tools and explosion-proof equipment.
A work permit system is recommended for any preparation and clean up.
Wetting work area with water will greatly reduce hazards.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES:

Volatile (Wt.%): By volume less than 1.90% maximum
Solubility in Water: Negligible
Specific Gravity: \( (H_2O = 1) \)
Vapor Pressure: Negligible
Evaporation Rate: (Butyl Acetate = 1) less than 1
SECTION 10: STABILITY AND REACTIVITY:

GENERAL STABILITY CONSIDERATIONS:

Stable under recommended handling and storage conditions. Material is sensitive to friction, shock, impact, and electrostatic discharge.

INCOMPATIBLE MATERIALS:

Incompatible with: acids, oxidizing agents, alkalies and amines, and strong sunlight or ultraviolet light.

HAZARDOUS DECOMPOSITION PRODUCTS:

None anticipated under normal or recommended handling and storage conditions.

HAZARDOUS POLYMERIZATION:

Not anticipated under normal or recommended handling and storage conditions

SECTION 11: TOXICOLOGICAL INFORMATION

REPORTED HUMAN EFFECTS: CARCINOGENICITY/TERATOGENICITY INFORMATION:

2,4-Dinitrotoluene (DNT) - Harmful if inhaled or absorbed through skin; reduces blood’s oxygen carrying capacity. Symptoms may be delayed. Causes skin and eye irritation. May cause cancer based on tests with laboratory animals.

2,4-DNT is a slight eye irritant, a slight to mild skin irritant, but is not a skin sensitizer in tests with laboratory animals. Toxicity described in animals from a single skin application included cyanosis, low red blood cell counts, liver and bone marrow damage, congested spleen, distended gall bladder, and edema of the brain.

Individuals with preexisting diseases of the cardiovascular system, nervous, bone marrow, or liver may have increased susceptibility to the toxicity of excessive exposures

The ACGIH has established Biological Inducers (BEI) for methemoglobin inducers of 1.5-% methemoglobin in blood.

REPORTED ANIMAL EFFECTS:

 Toxic effects described in animals from a single inhalation exposure include labored breathing and irritation. By ingestion, single exposures produced cyanosis and incoordination. Repeated exposures produced changes in the liver, spleen, and kidney, and changes in blood analysis (especially methemoglobinemia), testicular degeneration with depressed spermatogenesis, and incoordination.

Tests in some animals demonstrate carcinogenic activity with the potency increasing as the level of 2,6-dinitrotoluene increases. Some tests with pure 2,4-Dinitrotoluene suggest that this isomer may not be carcinogenic. Test in animals demonstrate reproductive toxicity, but do not demonstrate developmental toxicity. The compound produced genetic damage in bacterial and mammalian cell cultures as well as in animals.

SECTION 12: ECOLOGICAL INFORMATION:

ECOLOGICAL INFORMATION: NA
SECTION 13: DISPOSAL CONSIDERATIONS:

Disposal (if explosive) should be carried out under the direct supervision of a qualified person. Call Alliant Techsystems for assistance if needed. 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. Quantity burned at any one time should not exceed one pound. Use an ignition train of slow-burning combustible material to permit retreat to a safe distance.

SECTION 14: TRANSPORTATION INFORMATION

U.S. DOT:

For information regarding transportation of this product, please contact Alliant Techsystems at 540-638-8743

SECTION 15: REGULATORY INFORMATION:

The following environmental and regulatory data are provided to assist users of this product on defining their regulatory environmental compliance.

SARA SEC. 313 Chemicals

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<th>Sec. 302</th>
<th>Sec. 304</th>
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Section 313:

This product does contain chemicals subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act and 40CFR375.

CERCLA

This product does contain chemicals subject to reporting as a CERCLA Hazardous Substances under 40CFR302.4.

RCRA

This product exhibits the following characteristics listed in 40CFR261, Subpart C: ignitability and reactivity (D003).

SECTION 16: OTHER INFORMATION

LIST OF ACRONYMS:

ACIH: American Conference of Governmental Industrial Hygienist
AICS: Australian Inventory of Chemical Substances
AIWA WEEL: American Industrial Hygienists Association - Workplace Environmental Exposure Level
ANSI: American National Safety Institute
C: Ceiling
CASRN: Chemical Abstracts Service Registry Number
CERCLA: Comprehensive Emergency Response, Compensation and Liability Act
The information and recommendations contained in this Material Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the MSDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its environmental regulatory compliance obligations.