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**1. Product and Company Identification**

<b>Product name</b>	<b>PYRO 5413 H SUPER</b>	
<b>CAS #</b>	Mixture	<b>Revision # 4</b>
<b>Distributor</b>	Eckart America Louisville 4101 Camp Ground Road Louisville, KY 40211-2138	<b>Revision date 21-Sep-2007</b>
<b>Emergency Contact, CHEMTREC</b>	800-424-9300 (US) 1-703-527-3887 (INTERNATIONAL)	
<b>General assistance</b>	502-775-4280	

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**2. Hazards Identification**

**Emergency overview** Flammable/Combustible Material. May be ignited by heat, sparks or flames. Danger of serious damage to health by prolonged exposure. May cause breathing disorders and lung damage. Harmful in contact with eyes.

**Potential short term health effects**

**Skin** Components of the product may be absorbed into the body through the skin.

**Eyes** Contact may irritate eyes. Eye contact may result in corneal injury.

**Inhalation** May cause breathing disorders and lung damage.

**Ingestion** Do not ingest.

**Target organs** Eyes. Respiratory system. Skin.

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**3. Hazardous Materials / Information on Ingredients**

<b>Component</b>	<b>Wt. %</b>	<b>CAS #</b>
Aluminum	85 - 99	7429-90-5
Aluminum Oxide	0.5 - 10	1344-28-1
Carbon Black	0.1 - 2.5	1333-86-4

**Composition comments** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

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**4. First Aid Measures**

**Notes to physician** Symptoms may be delayed.

**General advice** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

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**5. Fire Fighting Measures**

**Flash point** Not available  
**Auto-ignition temperature** 1094 °F (590 °C) (calculated)

grams per cubic meter

**Suitable extinguishing media** Do not use water. DRY sand, sodium chloride powder, graphite powder or Met-L-X powder. Confining and smothering metal fires is preferable rather than applying water.

**Fire fighting equipment/instructions** Move containers from fire area if you can do it without risk. In the event of fire, wear self contained breathing apparatus.

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**Hazardous combustion products** Fire may produce irritating, corrosive and/or toxic gases.

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## 6. Accidental Release Measures

**Evacuation procedures** Keep unnecessary personnel away. Ventilate closed spaces before entering. Stay upwind. Keep out of low areas.

**Personal precautions** Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.

**Methods for cleaning up** Use non-sparking, conductive tools to collect material.

**Containment procedures** Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Prevent entry into waterways, sewers, basements or confined areas.

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## 7. Handling and Storage

**Handling** Use non-sparking tools when opening or closing containers. Use only explosion-proof equipment.

**Storage** Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Use care in handling/storage.

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## 8. Exposure Controls / Personal Protection

**Engineering measures to reduce exposure** Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

### Personal protective equipment

**Eye protection** Wear chemical goggles. Face-shield.

**Skin and body protection** Wear suitable protective clothing.

**Respiratory protection** A NIOSH- approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. When dusts or thermal processing fumes are generated and ventilation is not sufficient to effectively remove them, appropriate NIOSH/MSHA approved respiratory protection must be provided.

**General** Avoid contact with the skin and the eyes.

**Hygiene measures** When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

**Hand protection** Protective gloves.

## Exposure limits

### ACGIH - Threshold Limits Values - Time Weighted Averages (TLV-TWA)

Aluminum	7429-90-5	10 mg/m <sup>3</sup> TWA (metal dust)
Aluminum Oxide	1344-28-1	10 mg/m <sup>3</sup> TWA (particulate matter containing no asbestos and <1% crystalline silica)
Carbon Black	1333-86-4	3.5 mg/m <sup>3</sup> TWA

### U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)

Aluminum	7429-90-5	15 mg/m <sup>3</sup> TWA (total dust); 5 mg/m <sup>3</sup> TWA (respirable fraction)
Aluminum Oxide	1344-28-1	15 mg/m <sup>3</sup> TWA (total dust); 5 mg/m <sup>3</sup> TWA (respirable fraction)
Carbon Black	1333-86-4	3.5 mg/m <sup>3</sup> TWA

## 9. Physical & Chemical Properties

<b>Form</b>	Solid.
<b>Boiling point</b>	5396 °F (2980 °C) (calculated)
<b>Density</b>	21.7 lbs/gal (calculated)
<b>Specific gravity</b>	2.6 (Calculated)
<b>Volatile organic - wt. %</b>	0 % Weight (calculated) grams per cubic meter

## 10. Chemical Stability & Reactivity Information

<b>Stability</b>	Risk of ignition.
<b>Hazardous polymerization</b>	Will not occur.
<b>Conditions to avoid</b>	Heat, flames and sparks. Vapors may form explosive mixture with air.
<b>Incompatibility</b>	Caustics. This product is incompatible with nitrates.

## 11. Toxicological Information

### Routes of exposure

#### NIOSH - Pocket Guide - Target Organs

Aluminum	7429-90-5	respiratory system, skin, eyes
Aluminum Oxide	1344-28-1	respiratory system, skin, eyes
Carbon Black	1333-86-4	respiratory system, eyes (lymphatic cancer in presence of PAHs)

### Carcinogenicity

#### U.S. - OSHA - Hazard Communication Carcinogens

Carbon Black	1333-86-4	Present
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### Acute toxicity

#### Toxicology Data - Selected LD50s and LC50s

Aluminum Oxide	1344-28-1	Oral LD50 Rat: >5000 mg/kg
Carbon Black	1333-86-4	Oral LD50 Rat: >15400 mg/kg; Dermal LD50 Rabbit: >3 g/kg
Stearic Acid	57-11-4	Dermal LD50 Rabbit: >5 g/kg

**Chronic toxicity** Prolonged or repeated exposure may cause lung injury.

**Local effects** Risk of serious damage to eyes. Components of the product may be absorbed into the body through the skin.

**Symptoms and target organs**

**NIOSH - Pocket Guide - Target Organs**

Aluminum	7429-90-5	respiratory system, skin, eyes
Aluminum Oxide	1344-28-1	respiratory system, skin, eyes
Carbon Black	1333-86-4	respiratory system, eyes (lymphatic cancer in presence of PAHs)

## 12. Ecological Information

**Ecotoxicity** Components of this product have been identified as having potential environmental concerns.

## 13. Disposal Considerations

**Disposal instructions** Consult authorities before disposal. This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

## 14. Transport Information

**DOT**

**Proper shipping name** Aluminum Powder, Coated  
**Hazard class** 4.1  
**UN number** UN1309  
**Packaging group** II

**IATA**

**Proper shipping name** Aluminum Powder, Coated  
**Hazard class** 4.1  
**UN number** UN1309  
**Packaging group** I

**IMDG**

**Proper shipping name** Aluminum Powder, Coated  
**Hazard class** 4.1  
**UN number** UN1309  
**Packaging group** I

## 15. Regulatory Information

**Inventories**

Country(s) or region	Inventory name	On inventory
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (CCS)	Yes

## Inventories

Country(s) or region	Inventory name	On inventory
Europe	European Inventory of New and Existing Chemicals (EINECS)	No
Europe	European List of (ELINCS)	No
Japan	Japanese Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Korean Inventory of Chemicals (KICS)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**Canadian regulations** This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

### U.S. - CERCLA/SARA - Section 313 - Emission Reporting

Component	CAS #	Wt. %	Data Value
Aluminum	7429-90-5	91.678	1.0 % de minimis concentration (dust or fume only)
Aluminum Oxide	1344-28-1	5.2	1.0 % de minimis concentration (fibrous forms)

**State regulations** WARNING: This product contains a chemical known to the State of California to cause cancer.

### U.S. - California - Proposition 65 - Carcinogens List

Carbon Black	1333-86-4	carcinogen, initial date 2/21/03 (airborne, unbound particles of respirable size)
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### U.S. - New Jersey - Right to Know Hazardous Substance List

Aluminum	7429-90-5	sn 0054 (dust and fume); sn 2110 (powder, coated); sn 2111 (powder, uncoated, non-pyrophoric)
Aluminum Oxide	1344-28-1	sn 2891
Carbon Black	1333-86-4	sn 0342

### U.S. - Pennsylvania - RTK (Right to Know) List

Aluminum	7429-90-5	Environmental hazard
Aluminum Oxide	1344-28-1	Environmental hazard
Carbon Black	1333-86-4	Present

### U.S. - Rhode Island - Hazardous Substance List

Aluminum	7429-90-5	Toxic; Flammable
Aluminum Oxide	1344-28-1	Toxic
Carbon Black	1333-86-4	Toxic

**Superfund Amendments and Reauthorization Act of 1986 (SARA)****Section 302 Extremely  
Hazardous Substance** No**Section 311  
Hazardous Chemical** Yes**Hazard Categories** Immediate Hazard - Yes  
Delayed Hazard - Yes  
Fire Hazard - Yes  
Pressure Hazard - No  
Reactivity Hazard - No**HMIS ratings** Health 1  
Flammability 3  
Reactivity 1

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**16. Other Information****Issue date** 21-Sep-2007  
4**Replaces sheet dated** 22-Nov-2005**Disclaimer** THE INFORMATION AND RECOMMENDATIONS PROVIDED HEREIN ARE BELIEVED TO BE ACCURATE AT THE TIME OF PREPARATION OR OBTAINED FROM SOURCES BELIEVED TO BE RELIABLE. ECKART AMERICA CORPORATION MAKES NO WARRANTY, EXPRESSED OR IMPLIED, CONCERNING THIS DOCUMENT OR THE ACCURACY OF THE INFORMATION CONTAINED HEREIN.

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**Glossary of abbreviations**

ACGIH = American Conference of Governmental Industrial Hygienists

C9 = Nine Carbons

CAS = Chemical Abstracts Service

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act

CFR = Code of Federal Regulations

DOT = Department of Transportation

gm/kg = grams per kilograms

HMIS = Hazardous Materials and Information System

IARC = International Agency for Research on Cancer

LC = Lethal Concentration

LD = Lethal Dose

LEL = Lower Explosive Limit

mg/m<sup>3</sup> = milligrams per cubic meter

mg/kg = milligrams per kilograms

mg/l = milligrams per liter

mmHg = millimeters of mercury

MSHA = Mine Safety and Health Administration

N/A = Not Applicable

ND = Not Determined

NIOSH = National Institute for Occupational Safety and Health

NTP = National Toxicology Program

TWA = Time Weighted Average

OSHA = Occupational Safety and Health Administration

PELs = Permissible Exposure Limits

ppm = parts per million

RCRA = Resource Conservation and Recovery Act

SARA = Superfund Amendments and Reauthorization Act

STEL = Short Term Exposure Limit

TLVs = Threshold Limit Values

TSCA = Toxic Substances Control Act

UEL = Upper Explosive Limit

UN = United Nations

VOC = Volatile Organic Compound

WHMIS = Workplace Hazardous Materials Information System