Material Safety Data Sheet

Thermit Black

ACC# 45394

Section 1 - Chemical Product and Company Identification

MSDS Name: Thermit Black
Catalog Numbers: S80221, S80221-1
Synonyms: Thermit welding powder
Company Identification:
Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
1309-37-1	Iron oxide	75.0	215-168-2
7429-90-5	Aluminum	25.0	231-072-3

Hazard Symbols: None listed.
Risk Phrases: None listed.

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: silver and black to brown solid. May cause mechanical eye and skin irritation. May cause respiratory tract irritation. Inhalation of fumes may cause metal-fume fever. Warning! Flammable solid. May cause central nervous system effects.
Target Organs: Central nervous system.

Potential Health Effects

Eye: Dust may cause mechanical irritation. Aluminum particles may cause corneal necrosis.
Skin: Dust may cause mechanical irritation.
Ingestion: May cause severe and permanent damage to the digestive tract. The toxicological properties of this substance have not been fully investigated.
Inhalation: Dust is irritating to the respiratory tract. Inhalation of fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough,

weakness, chest pain, muscle pain and increased white blood cell count. Olfactory fatigue may occur. Can produce delayed pulmonary edema.
Chronic: Chronic inhalation may cause effects similar to those of acute inhalation. Chronic inhalation of finely divided powder has been reported to cause pulmonary fibrosis and emphysema. Repeated skin contact has been associated with bleeding into the tissue, delayed hypersensitivity and granulomas.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
Skin: Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.
Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.
Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.
Antidote: None reported.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dusts at sufficient concentrations can form explosive mixtures with air. Dust can be an explosion hazard when exposed to heat or flame. Flammable solid. May burn rapidly with flare burning effect. May re-ignite after fire is extinguished.
Extinguishing Media: Do NOT use water directly on fire. Use dry chemical to fight fire. Contact professional fire-fighters immediately. Cool containers with flooding quantities of water until well after fire is out.
Flash Point: Not available.
Autoignition Temperature: 760 deg C (1,400.00 deg F)
Explosion Limits, Lower:Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 1; Flammability: 1; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Very fine particles can cause a fire or explosion. Eliminate all ignition sources. Clean up spills immediately, observing precautions in the Protective Equipment section. Scoop up with a nonsparking tool, then place into a suitable container for disposal. Avoid generating dusty conditions.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid contact with heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.
Storage: Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Iron oxide	5 mg/m3 TWA (as Fe) (welding fumes, dust, total particulate)	as Fe: 5 mg/m3 TWA as Fe: 2500 mg/m3 IDLH	10 mg/m3 TWA
Aluminum	10 mg/m3 TWA (metal dust)	total: 10 mg/m3 TWA; respirable dust: 5 mg/m3 TWA; pyro powders and welding fume s: 5 mg/m3 TWA; soluble salts and alkyls: 2 mg/m3 TWA	15 mg/m3 TWA (total

OSHA Vacated PELs: Iron oxide: fume: 10 mg/m3 TWA Aluminum: total dust, as Al: 15 mg/m3 TWA; respirable fraction, as Al: 5 mg/m3 TWA
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Appearance: silver and black to brown
Odor: odorless

pH: Not applicable.
Vapor Pressure: Not applicable.
Vapor Density: Not available.
Evaporation Rate:Not applicable.
Viscosity: Not applicable.
Boiling Point: Not applicable.
Freezing/Melting Point:Not available.
Decomposition Temperature:Not available.
Solubility: Insoluble in water.
Specific Gravity/Density:>1.0
Molecular Formula:Mixture
Molecular Weight:Not available.

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid: Incompatible materials, ignition sources, dust generation, excess heat.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Aluminum oxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 1309-37-1: NO7400000
CAS# 7429-90-5: BD0330000
LD50/LC50:
Not available.
Not available.

Carcinogenicity:
CAS# 1309-37-1:
ACGIH: A4 - Not Classifiable as a Human Carcinogen (dust and fume, as Fe)
IARC: Group 3 carcinogen CAS# 7429-90-5: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology: No data available.
Teratogenicity: No data available.
Reproductive Effects: No data available.
Neurotoxicity: No data available.
Mutagenicity: No data available.
Other Studies: No data available.

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.
Environmental: No information reported.
Physical: No information available.

Other: None.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	FLAMMABLE SOLID, INORGANIC, N.O.S.				FLAMMABLE SOLID NOS (ALUMINUM POWDER)
Hazard Class:	4.1				4.1
UN Number:	UN3178				UN1325
Packing Group:	II				III

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 1309-37-1 is listed on the TSCA inventory.
CAS# 7429-90-5 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
SARA

Section 302 (RQ)
None of the chemicals in this material have an RQ.
Section 302 (TPQ)
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 1309-37-1: chronic. CAS # 7429-90-5: acute, chronic.

Section 313
This material contains Aluminum (CAS# 7429-90-5, 25 0%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
Clean Air Act:
This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 1309-37-1 can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
CAS# 7429-90-5 can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives
Hazard Symbols:
Not available.
Risk Phrases:

Safety Phrases:

WGK (Water Danger/Protection)
CAS# 1309-37-1: 0
CAS# 7429-90-5: 0
Canada - DSL/NDSL
CAS# 1309-37-1 is listed on Canada's DSL List.
CAS# 7429-90-5 is listed on Canada's DSL List.
Canada - WHMIS
This product has a WHMIS classification of B4, D2B.
Canadian Ingredient Disclosure List
CAS# 1309-37-1 is listed on the Canadian Ingredient Disclosure List.
CAS# 7429-90-5 is listed on the Canadian Ingredient Disclosure List.
Exposure Limits
CAS# 1309-37-1: OEL-ARAB Republic of Egypt:TWA 3 ppm (5 mg/m3) (fume) OEL-AUSTRALIA:TWA 5 mg/m3 (fume) OEL-BELGIUM:TWA 2 ppm (5 mg/m3) (fume) OEL-DENMARK:TWA 3.5 mg/m3 (fume) OEL-FINLAND:TWA 5 ppm (fume) OEL-FRANCE:TWA 5 mg/m3 (fume) OEL-GERMANY:TWA 6 mg/m3 (fume) OEL-TH E NETHERLANDS:TWA 10 mg/m3 OEL-THE NETHERLANDS:TWA 5 mg/m3 (fume) OE L-THE PHILIPPINES:TWA 10 mg/m3 (fume) OEL-POLAND:TWA 5 mg/m3 (fume) OEL-SWEDEN:TWA 3.5 mg/m3 (fume) OEL-SWITZERLAND:TWA 2 ppm (5 mg/m3) (fume) OEL-THAILAND:TWA 10 mg/m3 (fume) OEL-TURKEY:TWA 10 mg/m3 (fume) OEL-UNITED KINGDOM:TWA 10 mg/m3 (total dust) JAN9 OEL-UNITED KINGD OM:TWA 5 mg/m3 (resp. dust) OEL-UNITED KINGDOM:TWA 5 mg/m3;STEL 10 mg /m3 (fume) OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV
CAS# 7429-90-5: OEL-AUSTRALIA:TWA 10 mg/m3 OEL-AUSTRALIA:TWA 2 mg/m 3 (salts) OEL-AUSTRALIA:TWA 5 mg/m3 (fumes) OEL-AUSTRALIA:TWA 5 mg/m 3 (resp. dust) OEL-BELGIUM:TWA 10 mg/m3 OEL-BELGIUM:TWA 2 mg/m3 (sal ts) OEL-BELGIUM:TWA 5 mg/m3 (fumes) OEL-BELGIUM:TWA 5 mg/m3 (resp. d ust) OEL-DENMARK:TWA 10 mg/m3 (resp. dust) OEL-DENMARK:TWA 2 mg/m3 (

salts) OEL-DENMARK:TWA 5 mg/m3 (fumes) OEL-FINLAND:TWA 2 mg/m3 (salt
s) OEL-FRANCE:TWA 10 mg/m3 OEL-FRANCE:TWA 2 mg/m3 (salts) OEL-FRANC
E:TWA 5 mg/m3 (fumes) OEL-FRANCE:TWA 5 mg/m3 (resp. dust) OEL-GERMAN
Y:TWA 6 mg/m3 OEL-HUNGARY:STEL 5 mg/m3 OEL-HUNGARY:TWA 2 mg/m3;STEL
4 mg/m3 (salts) JAN9 OEL-THE NETHERLANDS:TWA 10 mg/m3 (resp. dust) O
EL-THE NETHERLANDS:TWA 2 mg/m3 (salts) OEL-RUSSIA:STEL 2 mg/m3 OEL-S
WEDEN:TWA 10 mg/m3 (resp. dust) OEL-SWEDEN:TWA 2 mg/m3 (salts) OEL-S
WEDEN:TWA 4 mg/m3 OEL-SWEDEN:TWA 5 mg/m3 (resp. dust) OEL-SWITZERLAN
D:TWA 2 mg/m3 (salts) OEL-SWITZERLAND:TWA 6 mg/m3 (fumes) OEL-SWITZE
RLAND:TWA 6 mg/m3 OEL-SWITZERLAND:TWA 6 mg/m3 (resp. dust) OEL-UNITE
D KINGDOM:TWA 10 mg/m3;STEL 20 mg/m3 OEL-UNITED KINGDOM:TWA 10 mg/m3;
STEL 20 mg/m3 (resp. dust) OEL-UNITED KINGDOM:TWA 2 mg/m3 (salts) OE
L IN BULGARIA, COLOMBIA, JOR

Section 16 - Additional Information

MSDS Creation Date: 11/25/1998
Revision #3 Date: 6/28/2002