

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT NAME: Pyroshield (4450)
MANUFACTURER: Tifco Industries, Inc.
 PO Box 40277
 Houston, TX 77240
 Phone: 281-571-6000

EMERGENCY TELEPHONE NUMBER: Chem-Tel (800)-255-3924

2. HAZARD IDENTIFICATION:

Emergency Overview: This product is normally not considered hazardous as shipped. Avoid eye contact or inhalation of dust from the product. When this product is used in a welding process, the most important hazards are welding fumes, heat, radiation and electric shock.

Classification of the Substance/Mixture

CLP/GHS Classification (1272/2008):

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

EU Classification (67/548/EEC):

This substance is not classified as dangerous according to Directive 67/548/EEC.

Hazardous Classification per 29CFR 1910.1200 (Rev. July 1, 2012):

Not a hazardous substance or mixture per 29CFR 1910.1200 (Rev. July 1, 2012)

Labelling:

Symbols: Void

Signal Word: Void

Hazard Statements: Void

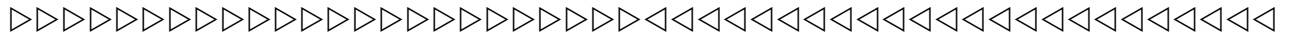
Precautionary Statements: Void

3. COMPOSITION / INFORMATION ON INGREDIENTS:

Chemical Identity	CAS #	Range %	OSHA PEL (mg/m3)	ACGIH-TLV (mg/m3)	Carcinogenicity	EU Classification (67/548/EEC)	CLP/GHS Classification (1272/2008)	Hazardous Classification per 29CFR 1910.1200 (Rev. July, 2012)
Cellulose	9004-34-6	1-11	NR	10	No	Not Dangerous	Not Hazardous	Not Hazardous
Mica	12001-26-2	20-30	20 mppef	3	No	Not Dangerous	Not Hazardous	Not Hazardous
Sodium Chloride	7647-14-5	10-20	NR	NR	No	Not Dangerous	Not Hazardous	Not Hazardous
Water	7732-18-5	40-50	NR	NR	No	Not Dangerous	Not Hazardous	Not Hazardous
Sodium Alumino Sulphosilicate	57455-37-5	1-2	10	10	No	Not Dangerous	Not Hazardous	Not Hazardous
Alginate	9005-38-3	1-11	NR	NR	No	Not Dangerous	Not Hazardous	Not Hazardous

Important This section covers the materials of which the products manufactured. The fumes and gases produced during normal use of this product are covered in section 10. The term "Hazardous" in "Hazardous Material" should be interpreted as a term required and defined in OSHA Hazard Communication Standard 29CFR 1910-1200 and it does not necessarily imply the existence of hazard. The chemicals or compounds reportable by Section 313 of SARA are marked by the symbol #.

4. FIRST AID MEASURES:



Inhalation: Remove to fresh air immediately or administer oxygen. Get medical attention immediately.

Skin: Flush skin with large amounts of water. If irritation develops and persists, get medical attention.

Eye: Flush eyes with water for at least 15 minutes. Get medical attention.

Ingestion: Obtain medical attention immediately if ingested. Rinse mouth.

Electric Shock: Disconnect and turn off the power. Use a nonconductive material to pull victim away from contact with live parts or wires. Immediately contact a physician.

5. FIRE-FIGHTING MEASURES:

Suitable Extinguishing Media: No specific recommendations for welding consumables. Welding arcs and sparks can ignite combustible and flammable materials. Use the extinguishing media recommended for the burning material and fire situation.

Unsuitable Extinguishing Media: Not applicable

Specific Hazards Arising From Chemical: Arcs and sparks can ignite combustibles and flammable products.

Protective Equipment: Fire fighters should wear complete protective clothing including self-contained breathing apparatus

6. ACCIDENTAL RELEASE MEASURES:

Personal Precautions: Refer to section 8.

Environment Precautions: Refer to section 13.

Cleaning Measures: Solid objects may be picked up and placed into a container. Liquids or pastes should be scooped up and placed into a container. Wear proper protective equipment while handling these materials. Do not discard as refuse.

7. HANDLING AND STORAGE:

Precautions for Safe Handling: Handle with care to avoid stings or cuts. Wear gloves when handling welding consumables. Avoid exposure to dust. Do not ingest. Some individuals can develop an allergic reaction to certain materials. Retain all warning and identity labels.

Conditions for Safe Storage: Store in dry place in closed packages. Keep separate from chemical substances like acids and strong bases, which could cause chemical reactions.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION:

Engineering Controls: Avoid exposure to welding fumes, radiation, spatter, electric shock, heated materials and dust. Ensure sufficient ventilation, local exhaust, or both, to keep welding fumes and gases from breathing zone and general area. Keep work place and protective clothing clean and dry. Train welders to avoid contact with live electrical parts and insulate conductive parts. Check condition of protective clothing and equipment on a regular basis.

Exposure limits: Use industrial hygiene equipment to ensure that exposure does not exceed applicable national exposure limits. The limits defined under section 3 can be used as guidance. Unless noted, all values are for 8 hour time weighted average. For information about welding fume analysis refer to section 10.

Biological limits: No available data

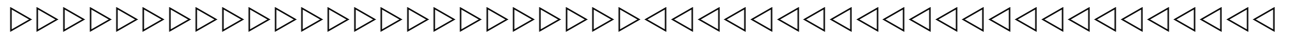
Personal protection:

Respiratory protection: Use an air purifying dust respirator when welding or brazing in a confined space, or when local exhaust or ventilation is not sufficient to keep exposure values within safe limits.

Hands protection: Wear appropriate gloves to prevent skin contact.

EN 12477: Protection gloves for welders

Requirements (EN Levels)	Type A	Type B
Abrasion (Cycles)	2 (500)	1 (100)
Cut (Factor)	1 (1.2)	1 (1.2)
Tear (Newton)	2 (25)	1 (10)
Puncture (Newton)	2 (60)	1 (20)



Burning Behaviour	3	2
Contact Heat	1	1
Convective Heat	2	-
Small Splashes	3	2
Dexterity	1 (11)	4 (6.5)

Type B gloves are recommended when high dexterity is required as for TIG welding, while type A gloves are recommended for other welding processes. The contact temp (°C) is 100 and the threshold time (seconds) >15.

Eyes protection: Welder's helmet or face shield with colour absorbing lenses. Shield and filter to provide protection from harmful UV radiation, infra red and molten metal approved to standard EN379. Filter shade to be a minimum of shade 9.

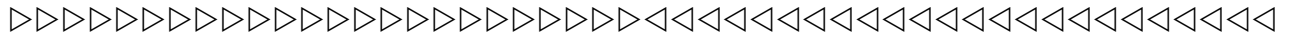
Skin protection: Heat-resistant protective clothing. Wear safety boots, apron, arm and shoulder protection. Keep protective clothing clean and dry. Clothing should be selected to suit the level, duration and purpose of the welding activity.

Class 1	
Impact of Spatter	15 Drops
Heat Transfer (radiation)	RHTI 24 ≥ 7 seconds
Process	<p>Manual welding with light formation of spatter and drops</p> <ul style="list-style-type: none"> • Gas Welding • TIG Welding • MIG Welding • Micro plasma welding • Brazing • Spot Welding • MMA Welding (with rutile-covered electrode)
Environmental Conditions	<p>Operation of machines</p> <ul style="list-style-type: none"> • Oxygen cutting machines • Plasma cutting machines • Resistance welding machines • Machines for thermal spraying • Bench welding

Class 2	
Impact of Spatter	25 Drops
Heat Transfer (radiation)	RHTI 24 ≥ 16 seconds
Process	<p>Manual welding with heavy formation of spatter and drops</p> <ul style="list-style-type: none"> • MMA welding (with basic or cellulose-covered electrodes) • MAG welding (with CO2 or mixed gases) • MIG Welding (with high current) • Self shielded flux core arc welding • Plasma cutting • Gouging • Oxygen cutting • Thermal spraying
Environmental Conditions	<p>Operation of machines</p> <ul style="list-style-type: none"> • In confined spaces • At overhead welding/cutting or in comparable constrained positions

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance: Solid



Color: None
Odour: Odourless
Odour Threshold: Not Available
pH Value: Not Available
Specific Gravity: Not Available
Melting Point/Melting Range: Not Available
Freezing Point: Not Available
Boiling Point/Boiling Range (° F @ 760 mmHg): N/A
Flash point: Not Available
Evaporation Rate: Not Available
Self-in flammability: Not Available
Explosion limits: Not Available
Vapour pressure: (mm Hg): NA
Vapour density: (Air= 1): NA
Density at 20°C: Not Available
Percent volatile by volume: Not Available
Bulk Density: Not Available
Relative density: Not Available
Solubility: Soluble in water
Reactivity in Water: Not Available
Partition coefficient: Not Available
Auto-ignition temperature: Not Available
Decomposition temperature: Not Available
Other Information: No available data.

10. STABILITY AND REACTIVITY:

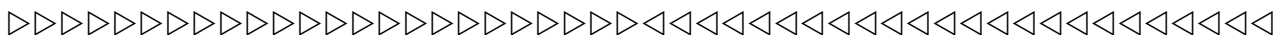
Chemical Stability: This product is stable under normal conditions.
Hazardous Reactions: Not applicable.
Conditions to Avoid: Not applicable.
Incompatible Materials: Not applicable.
Hazardous Decomposition Products: When this product is used in a welding process, hazardous decomposition product would include those from volatilization, reaction or oxidation of the material listed in section 3 and those from the base metal and coating.
 Organic components and soluble inorganic components are 100% biodegradable. Mineral components are inert and may be introduced into the environment without consequence.

11. TOXICOLOGICAL INFORMATION:

Signs and Symptoms of Overexposure: Fumes and gases generated during use of this product, in conjunction with heating, welding, brazing or soldering procedures, can be dangerous to your health. Aggravation of pre-existing respiratory or allergic conditions may occur.
Acute Effects: Overexposure may cause minor skin irritation/dryness.

LD/LC50 Values that are relevant for classification		
Cellulose 9004-34-6		
Oral	LD50	>5000 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rabbit)

LD/LC50 Values that are relevant for classification	
Sodium Alumino Sulphosilicate 57455-37-5	



Oral	LD50	>10 g/kg (rat)
	LC50	>32000 mg/kg (fish)

LD/LC50 Values that are relevant for classification		
Alginate 9005-38-3		
Oral	LD50	>5000 mg/kg (rat)
Intravenous	LD50	1 g/kg (rat)
Intraperitoneal	LD50	250 mg/kg (cat)
Intravenous	LD50	100 mg/kg (rabbit)

Chronic Effects: Overexposure to nuisance dust from products may cause benign or inert pneumoconiosis or cough. Prolonged or repeated exposure to Sodium Alumino Sulphosilicate may cause severe irritation and dermatitis. Repeated inhalation may cause chronic bronchitis.

12. ECOLOGICAL INFORMATION:

Toxicity: No available data.

Persistence and Degradability: No available data.

Bio accumulative Potential: No available data.

Mobility in Soil: No available data.

Other Adverse Effects: No available data.

Do not allow undiluted product or large quantities to reach ground water, water course or sewage systems. Do not allow product to be released in the environment without proper governmental permits.

13. DISPOSAL CONSIDERATIONS:

Product: For product elimination, dispose of in accordance with EPA regulations.

Package: May be disposed in approved landfills provided local regulations are observed.

14. TRANSPORT INFORMATION:

UN-number: Not applicable

UN proper shipping name: Not applicable

Transport hazard class: Not applicable

Packing group: Not applicable

Environmental hazards: Not applicable

Special precautions for users: Not applicable

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: No international regulations or restrictions are applicable.

15. REGULATORY INFORMATION:

Safety, health and environment regulations/legislation specific for the substance or mixture: Read and understand the manufacturer's instructions, your employer's safety practices and the health and safety instructions on the label. Observe any federal and local regulations. Take precautions when welding and protect yourself and others.

Chemical safety assessment: No

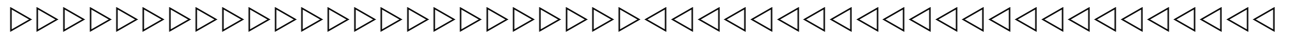
USA: Under the OSHA Hazard Communication Standard, this product is considered hazardous.

CALIFORNIA PROPOSITION 65: No compounds present. (California Health & Safety Code § 25249.5 et seq.)

United States EPA Toxic Substance Control Act: All constituents of this product are on the TSCA inventory list or are excluded from listing.

EPCRA/SARA Title III Toxic Chemicals

The following metallic components are listed as SARA 313 "Toxic Chemicals" and potential subject to annual SARA reporting. See Section 3 for weight percentage.



16. OTHER INFORMATION:

The information in this document is believed to be correct as of the date issued. However, no warranty is expressed to be implied regarding the accuracy or completeness of this information. This information and product are furnished on the condition that the person receiving them shall make his own determinations as to the suitability of the product for his particular purpose and on the condition that he assumes the risk of his use thereof.

This Material Safety Data Sheet complies with the EC directives 91/155/EEC and 93/112/EEC, including modifications 2001/58/EC.

Complies with OSHA Communication Standard 29 CFR 1910.1200 and Superfund Amendments and Reauthorization Act (SARA) of 1986 Public Law 99-499

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