

# Safety Data Sheet

Material Name: Thermashield

## \*\*\* Section 1 - Identification of the Substance/Preparation and the Company/Undertaking \*\*\*

### Manufacturer Information

Avtec Industries, Inc.  
9 Kane Industrial Drive  
Hudson, MA 01749

Phone: 978-562-2300

## \*\*\* Section 2 - Composition / Information on Ingredients \*\*\*

EC #	Component	Percent	Symbols	Risks
201-159-0	Methyl ethyl ketone 78-93-3	14	Xi	R:11-36-66-67
200-662-2	Acetone 67-64-1	14	Xi	R:11-36-66-67
203-625-9	Toluene 108-88-3	3	Repr.Cat.3 Xn Xi	R:11-63-48/20-65-38-67
204-118-5	Ethanol, 2-chloro-, phosphate (3:1) 115-96-8	2	Carc.Cat.3 Xn N	R:40-22-51-53

## \*\*\* Section 3 - Hazards Identification \*\*\*

### Human and Environmental Hazards

Skin or eye contact may cause irritation. Vapors may cause respiratory irritation.

## \*\*\* Section 4 - First Aid Measures \*\*\*

### First Aid: Eyes

Immediately flush eyes with plenty of water for at least 15 minutes.

### First Aid: Skin

For skin contact flush with large amounts of water.

### First Aid: Ingestion

Never give anything by mouth to an unconscious person. Do not induce vomiting. If spontaneous vomiting occurs, keep head below hips to prevent aspiration of liquid into the lungs.

### First Aid: Inhalation

Remove victim to fresh air and restore breathing if required. Call a physician if required. If breathing stops give artificial respiration.

## \*\*\* Section 5 - Fire Fighting Measures \*\*\*

### General Fire Hazards

Never use welding or cutting torch on or near drum (even empty) because of residue or product can ignite explosively. Vapors are heavier than air and may travel along the ground or be moved by ventilation and ignited by pilot lights, flames and other ignition sources at locations distant from the material handling point.

### Hazardous Combustion Products

Water, carbon dioxide, carbon monoxide, and traces of ammonia.

### Extinguishing Media

CO2, Dry Chemical Water Fog

### Fire Fighting Equipment/Instructions

Do not use a direct stream of water. Product may float and can be reignited on the surface of the water. Do not enter a confined area without full bunker gear including a positive pressure NIOSH approved self-contained breathing apparatus. Decomposition products may form toxic materials.

## \*\*\* Section 6 - Accidental Release Measures \*\*\*

### Containment Procedures

Stop the flow of material, if this is without risk.

### Clean-Up Procedures

Flush with water in a tank or to an opened well-ventilated area. Absorb or remove to container and dispose of properly in conformity with local government restrictions.

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## Evacuation Procedures

Isolate area. Keep unnecessary personnel away.

## Special Procedures

Avoid contact with skin and eyes.

## \*\*\* Section 7 - Handling and Storage \*\*\*

### Handling Procedures

Transfer small amounts left over into small containers. Ground containers and other equipment during product transfer. Do not store in glass containers due to the danger of breaking. Do not pour into containers that held highly flammable materials, static electricity may result, use good hygiene practices. Wash hands before eating, drinking, etc.

### Storage Procedures

Store in tightly closed containers in cool dry isolated, well ventilated area away from heat or flames, sources of ignition and incompatible materials.

### Specific Use

Solvent based fire retardant coating.

## \*\*\* Section 8 - Exposure Controls / Personal Protection \*\*\*

### Substance Exposure Limits

#### Acetone (200-662-2)

ACGIH:	750 ppm STEL 500 ppm TWA
Austria:	2000 ppm STEL (4 X 15 min); 4800 mg/m3 STEL (4 X 15 min) 500 ppm MAK; 1200 mg/m3 MAK
Belgium:	1000 ppm STEL; 2420 mg/m3 STEL 500 ppm TWA; 1210 mg/m3 TWA
Denmark:	250 ppm TWA; 600 mg/m3 TWA
Finland:	630 ppm STEL; 1500 mg/m3 STEL 500 ppm TWA; 1200 mg/m3 TWA
France:	1000 ppm VLCT (restrictive limit); 2420 mg/m3 VLCT (restrictive limit) 500 ppm VME (restrictive limit); 1210 mg/m3 VME (restrictive limit)
Germany:	500 ppm TWA (exposure factor 2); 1200 mg/m3 TWA (exposure factor 2) 80 mg/L; Parameter = acetone; Material = urine; Sampling time = end of exposure/shift 500 ppm MAK; 1200 mg/m3 MAK 1000 ppm Peak; 2400 mg/m3 Peak
Greece:	3560 mg/m3 STEL 1780 mg/m3 TWA
Ireland:	500 ppm TWA; 1210 mg/m3 TWA
Italy:	500 ppm TWA; 1210 mg/m3 TWA
Netherlands:	1004 ppm STEL; 2420 mg/m3 STEL 502 ppm MAC; 1210 mg/m3 MAC
Portugal:	500 ppm TWA
Spain:	500 ppm VLA-ED (indicative limit value); 1210 mg/m3 VLA-ED (indicative limit value)
Sweden:	250 ppm LLV; 600 mg/m3 LLV 500 ppm STV; 1200 mg/m3 STV

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## Methyl ethyl ketone (201-159-0)

ACGIH: 300 ppm STEL  
200 ppm TWA

Austria: 200 ppm STEL (4 X 30 min); 590 mg/m<sup>3</sup> STEL (4 X 30 min)  
100 ppm MAK; 295 mg/m<sup>3</sup> MAK  
skin notation

Belgium: 300 ppm STEL; 900 mg/m<sup>3</sup> STEL  
200 ppm TWA; 600 mg/m<sup>3</sup> TWA

Denmark: 50 ppm TWA; 145 mg/m<sup>3</sup> TWA  
Potential for cutaneous absorption

Finland: 100 ppm STEL; 300 mg/m<sup>3</sup> STEL  
Potential for cutaneous absorption

France: 300 ppm VLCT (restrictive limit); 900 mg/m<sup>3</sup> VLCT (restrictive limit)  
200 ppm VME (restrictive limit); 600 mg/m<sup>3</sup> VME (restrictive limit)

Germany: 200 ppm TWA (exposure factor 1); 600 mg/m<sup>3</sup> TWA (exposure factor 1)  
5 mg/L; Parameter = 2-butanone; Material = urine; sampling time = end of exposure/shift  
200 ppm MAK; 600 mg/m<sup>3</sup> MAK  
200 ppm Peak; 600 mg/m<sup>3</sup> Peak

Greece: 300 ppm STEL; 900 mg/m<sup>3</sup> STEL  
200 ppm TWA; 600 mg/m<sup>3</sup> TWA

Ireland: 300 ppm STEL; 900 mg/m<sup>3</sup> STEL  
200 ppm TWA; 600 mg/m<sup>3</sup> TWA  
Potential for cutaneous absorption

Italy: 200 ppm TWA; 600 mg/m<sup>3</sup> TWA

Netherlands: 300 ppm STEL; 900 mg/m<sup>3</sup> STEL  
200 ppm MAC; 590 mg/m<sup>3</sup> MAC  
skin notation

Portugal: 200 ppm TWA

Spain: 300 ppm VLA-EC (indicative limit value); 900 mg/m<sup>3</sup> VLA-EC (indicative limit value)  
200 ppm VLA-ED (indicative limit value); 600 mg/m<sup>3</sup> VLA-ED (indicative limit value)

Sweden: 50 ppm LLV; 150 mg/m<sup>3</sup> LLV  
100 ppm STV; 300 mg/m<sup>3</sup> STV

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## **Toluene (203-625-9)**

EU:	50 ppm TWA; 192 mg/m <sup>3</sup> TWA 100 ppm STEL; 384 mg/m <sup>3</sup> STEL Possibility of significant uptake through the skin
ACGIH:	20 ppm TWA
Austria:	100 ppm STEL (4 X 15 min); 380 mg/m <sup>3</sup> STEL (4 X 15 min) 50 ppm MAK; 190 mg/m <sup>3</sup> MAK skin notation
Belgium:	100 ppm STEL; 384 mg/m <sup>3</sup> STEL 50 ppm TWA; 192 mg/m <sup>3</sup> TWA Skin
Denmark:	25 ppm TWA; 94 mg/m <sup>3</sup> TWA Potential for cutaneous absorption
Finland:	100 ppm STEL; 380 mg/m <sup>3</sup> STEL 50 ppm TWA; 190 mg/m <sup>3</sup> TWA Potential for cutaneous absorption
France:	100 ppm VLCT (restrictive limit); 384 mg/m <sup>3</sup> VLCT (restrictive limit) 50 ppm VME (restrictive limit); 192 mg/m <sup>3</sup> VME (restrictive limit)
Germany:	50 ppm TWA (exposure factor 4); 190 mg/m <sup>3</sup> TWA (exposure factor 4) 1.0 mg/L; Parameter = toluol; Material = whole blood; Sampling time = end of exposure/shift; 3.0 mg/L; Parameter = o-cresol; Material = urine; Sampling time = end of exposure/shift, after several shifts (for long-term exposures) 50 ppm MAK; 190 mg/m <sup>3</sup> MAK 200 ppm Peak; 760 mg/m <sup>3</sup> Peak
Greece:	100 ppm STEL; 384 mg/m <sup>3</sup> STEL 50 ppm TWA; 192 mg/m <sup>3</sup> TWA
Ireland:	100 ppm STEL; 560 mg/m <sup>3</sup> STEL 50 ppm TWA; 188 mg/m <sup>3</sup> TWA Potential for cutaneous absorption
Netherlands:	40 ppm MAC; 150 mg/m <sup>3</sup> MAC
Portugal:	50 ppm TWA
Spain:	100 ppm VLA-EC (indicative limit value); 384 mg/m <sup>3</sup> VLA-EC (indicative limit value) 50 ppm VLA-ED (indicative limit value); 192 mg/m <sup>3</sup> VLA-ED (indicative limit value) skin - potential for cutaneous exposure
Sweden:	50 ppm LLV; 200 mg/m <sup>3</sup> LLV 100 ppm STV; 400 mg/m <sup>3</sup> STV

## **Engineering Controls**

Use explosion proof ventilation as required to control particulate and any minor vapor concentrations. A spray booth is recommended.

## **PERSONAL PROTECTIVE EQUIPMENT**

### **Personal Protective Equipment: Eyes/Face**

Protective glasses or goggles in heavy mist areas.

### **Personal Protective Equipment: Skin**

Wear impervious gloves as necessary to avoid excessive skin contact: i.e. rubber or neoprene.

### **Personal Protective Equipment: Respiratory**

Use an organic vapor respirator for concentrations exceeding the Occupational Exposure Limit.

### **Personal Protective Equipment: General**

Eye wash fountain is recommended.

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## \*\*\* Section 9 - Physical & Chemical Properties \*\*\*

<b>Appearance:</b>	Opaque, white-colored coating.	<b>Odor:</b>	Ketone
<b>Physical State:</b>	Liquid	<b>pH:</b>	ND
<b>Vapor Pressure:</b>	ND	<b>Vapor Density:</b>	>1
<b>Boiling Point:</b>	132-288°F	<b>Melting Point:</b>	NA
<b>Solubility (H2O):</b>	Insoluble	<b>Specific Gravity:</b>	1.27
<b>Evaporation Rate:</b>	Slower than Ether	<b>VOC:</b>	ND
<b>Octanol/H2O Coeff.:</b>	ND	<b>Flash Point:</b>	45°F
<b>Flash Point Method:</b>	ND	<b>Upper Flammability Limit (UFL):</b>	ND
<b>Lower Flammability Limit (LFL):</b>	ND	<b>Burning Rate:</b>	ND
<b>Auto Ignition:</b>	ND		

## \*\*\* Section 10 - Chemical Stability & Reactivity Information \*\*\*

### Chemical Stability

This is a stable material.

### Chemical Stability: Conditions to Avoid

Heat and fires. Ignition sources.

### Incompatibility

Strong alkalines or strong oxidizers. This material may dissolve some plastics, rubber compounds, or coatings.

### Hazardous Decomposition

Hydrogen chloride and very small amounts of phosgene and chlorine

### Hazardous Polymerisation

Will not occur.

## \*\*\* Section 11 - Toxicological Information \*\*\*

### Potential Health Effects

#### A: General Product Information

Skin: Prolonged or repeated contact can cause moderate irritation, defaulting and/or dermatitis.

Eye: May cause irritation.

Ingestion: Preexisting eye, skin, heart, central nervous system and respiratory disorders may be aggravated by exposure to this product.

Inhalation: Breathing vapor may irritate the nose and throat. Central nervous system effects including excitation, euphoria, contracted eye pupil, dizziness, blurred vision, fatigue, nausea, headache, loss of consciousness, respiratory unrest, and sudden death could occur of long term and/or high concentration exposures vapors.

Acute and Chronic: Overexposure may cause anesthesis, headache, nausea or dizziness. Breathing the vapors may irritate the nose and throat. Detectable amounts of chemicals or substances known to the state of Massachusetts to cause cancer, birth defects, or other reproductive harm may be found in this product. Use care when handling chemical and petroleum products even though they are water reducible.

#### B: Substance Analysis - LD50/LC50

##### Acetone (200-662-2)

Oral LD50 Rat: 5800 mg/kg

##### Methyl ethyl ketone (201-159-0)

Inhalation LC50 Mouse: 32 g/m<sup>3</sup>/4H; Oral LD50 Rat:2737 mg/kg; Dermal LD50 Rabbit:6480 mg/kg

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**Toluene (203-625-9)**

Inhalation LC50 Rat: 12.5 mg/L/4H; Inhalation LC50 Rat:>26700 ppm/1H; Oral LD50 Rat:636 mg/kg; Dermal LD50 Rabbit:8390 mg/kg; Dermal LD50 Rat:12124 mg/kg

**Ethanol, 2-chloro-, phosphate (3:1) (204-118-5)**

Inhalation LC50 Rat: >5 mg/L/4H; Oral LD50 Rat:430 mg/kg; Dermal LD50 Rabbit:>5000 mg/kg

**Carcinogenicity**

**A: General Product Information**

No information available for the product.

**B: Substance Carcinogenicity**

**Toluene (203-625-9)**

IARC: Monograph 71 [1999], Monograph 47 [1989] (Group 3 (not classifiable))

**Ethanol, 2-chloro-, phosphate (3:1) (204-118-5)**

IARC: Monograph 71 [1999] Monograph 48 [1990] (Group 3 (not classifiable))

Germany: Category 2

**\*\*\* Section 12 - Ecological Information \*\*\***

**Ecotoxicity**

**A: General Product Information**

No information available for the product.

**B: Substance Analysis - Ecotoxicity - Aquatic Toxicity**

**Acetone (200-662-2)**

**Test & Species**

		<b>Conditions</b>
	96 Hr LC50 Oncorhynchus mykiss	5540 mg/L [static]
	96 Hr LC50 Pimephales promelas	6210 mg/L [flow-through]
96 Hr LC50 Lepomis macrochirus	8300 mg/L [static]	14500 mg/L
	15 min EC50 Photobacterium phosphoreum	48 Hr EC50 water flea 0.0039 mg/L
	48 Hr EC50 water flea	12700 mg/L [Static]
	48 Hr EC50 Daphnia magna	12600 mg/L

**Methyl ethyl ketone (201-159-0)**

**Test & Species**

		<b>Conditions</b>
	96 Hr LC50 Pimephales promelas	3220 mg/L [flow-through]
96 Hr LC50 Lepomis macrochirus	1690 mg/L	3426 mg/L
	5 min EC50 Photobacterium phosphoreum	520 mg/L
30 min EC50 Photobacterium phosphoreum	3403 mg/L	
	48 Hr EC50 water flea	
	48 Hr EC50 Daphnia magna	5091 mg/L

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## Toluene (203-625-9) Test & Species

		Conditions
	96 Hr LC50 Pimephales promelas	25 mg/L [flow-through] (1 day old)
	96 Hr LC50 Oncorhynchus mykiss	24.0 mg/L [flow-through]
	96 Hr LC50 Lepomis macrochirus	24.0 mg/L [static]
96 Hr LC50 Lepomis macrochirus	13 mg/L [static] 96 Hr EC50 Selenastrum capricornutum	>433 mg/L 30 min EC50 Photobacterium phosphoreum 11.3 mg/L
	48 Hr EC50 water flea	310 mg/L
	48 Hr EC50 Daphnia magna	11.3 mg/L

## Ethanol, 2-chloro-, phosphate (3:1) (204-118-5) Test & Species

		Conditions
	96 Hr LC50 Oryzias latipes	6.3 mg/L [static] 271 mg/L
	72 Hr EC50 Scenedesmus subspicatus	
	72 Hr EC50 Scenedesmus subspicatus	1.1 mg/L
	96 Hr EC50 Scenedesmus subspicatus	1.2 mg/L
96 Hr EC50 Selenastrum capricornutum	117 mg/L 24 Hr EC50 water flea	340 mg/L
	24 Hr EC50 Daphnia magna	4.9 mg/L

### Mobility

No information available for the product.

### Persistence & Degradation

No information available for the product.

### Bioaccumulation

No information available for the product.

### Other Adverse Effects

No information available for the product.

## \*\*\* Section 13 - Disposal Considerations \*\*\*

### Waste Disposal Instructions

Avoid disposal, attempt to utilize preparation completely. Prior to disposal of unused preparation, consult an approved waste disposal operative to ensure regulatory compliance. Refer to local statutory requirements and the Toxic Industrial Waste Regulations (TIWR) for proper disposal instructions.

## \*\*\* Section 14 - Transportation Information \*\*\*

### IATA Information

Shipping Name: Paint

UN #: 1263 Hazard Class: 3 Packing Group: II

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## ICAO Information

**Shipping Name:** Paint

**UN #:** 1263 **Hazard Class:** 3 **Packing Group:** II

## IMDG Information

**Shipping Name:** Paint

**UN #:** 1263 **Hazard Class:** 3 **Packing Group:** II

### \*\*\* Section 15 - Regulatory Information \*\*\*

#### EU MARKING AND LABELLING:

##### Symbol(s):

F Xn

##### Risk Phrases:

R11 Highly flammable. R11 Highly flammable.

R36 Irritating to eyes. R36 Irritating to eyes.

R40 Possible risks of irreversible effects. R40 Limited evidence of a carcinogenic effect.

R66 Repeated exposure may cause skin dryness or cracking. R66 Repeated exposure may cause skin dryness or cracking.

R67 Vapours may cause drowsiness and dizziness. R67 Vapours may cause drowsiness and dizziness.

##### Safety Phrases:

#### A: General Product Information

S15 Keep away from heat.

S16 Keep away from sources of ignition - No Smoking.

S24/25 Avoid contact with skin and eyes.

S7/9 Keep container tightly closed and in a well-ventilated place.

#### B: Substance Analysis - Inventory

Component/CAS	EC #	EEC	CAN	TSCA
Acetone 67-64-1	200-662-2	EINECS	DSL	Yes
Methyl ethyl ketone 78-93-3	201-159-0	EINECS	DSL	Yes
Toluene 108-88-3	203-625-9	EINECS	DSL	Yes
Ethanol, 2-chloro-, phosphate (3:1) 115-96-8	204-118-5	EINECS	DSL	Yes

### \*\*\* Section 16 - Other Information \*\*\*

#### Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail; ADR/RID = European Agreement of Dangerous Goods by Road/Rail; AS = Standards Australia; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

End of Sheet