

### Safety Data Sheet

## Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier	
Product Name	<ul> <li>Plastic Scintillators with lead</li> </ul>
Product Code	• BC-452; BC-4522; BC-4525; BC-452510
1.2 Relevant identified u	ises of the substance or mixture and uses advised against
Relevant identified use(s)	Radiation detection
1.3 Details of the supplie	er of the safety data sheet
Manufacturer	Luxium Solutions
	17900 Great Lakes Parkway Hiram, OH 44234 United States www.luxiumsolutions.com
Telephone (General)	• 440-834-5600
1.4 Emergency telephor	ne number

# **Contract #** 6493674

U.S. & Canada	<ul> <li>1-800-255-3924 – VelocityEHS</li> </ul>
International	• +1-813-248-0585 - VelocityEHS

### **Section 2: Hazards Identification**

#### EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010] According to: EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

## 2.1 Classification of the substance or mixture

CLP	<ul> <li>Contains Lead! Dusts generated by further processing (grinding, sanding or polishing) can be a source of lead exposure. The hazards represented below are based on exposure to the lead ingredient. Acute Toxicity Inhalation 4 - H332 Carcinogenicity 1B - H350 Reproductive Toxicity 1A - H360Df Specific Target Organ Toxicity Repeated Exposure 2 - H373 Hazardous to the aquatic environment Chronic 2 - H411</li> </ul>
DSD/DPD	<ul> <li>Contains Lead! Dusts generated by further processing (grinding, sanding or polishing) can be a source of lead exposure. The hazards represented below are based on exposure to the lead ingredient. Harmful (Xn)</li> </ul>

Carcinogenic Substances - Category 2 Substances Toxic To Reproduction - Category 1 Substances Toxic To Reproduction - Category 3 Dangerous to the Environment (N) R20/22, R33, R49, R51, R53, R61, R62

### 2.2 Label Elements

CLP



		V	$\mathbf{V}$
Hazard statements •	H350 H360E H373	- May cause c Of - May damag - May cause da	
Precautionary statements			
	P202 - P260 - P271 - P273 - P281 -	Do not handle Do not breatl Use only outo Avoid release Use personal	loors or in a well-ventilated area. to the environment. protective equipment as required.
	P304+ comfo P312 - P308+	rtable for brea · Call a POISO ·P313 - IF exp	ALED: Remove victim to fresh air and keep at rest in a position thing. N CENTER or doctor/physician if you feel unwell. osed or concerned: Get medical advice/attention.
Storage/Disposal •	P501 ·	Dispose of co	up. ntent and/or container in accordance with local, regional, national regulations.
Supplemental information •	89.33 toxicity		ercent of this product consists of an ingredient of unknown
DSD/DPD		×	¥_2
Risk phrases •	R33 -   R49 -   R51 - <sup>-</sup> R53 -   R61 -	Danger of cum May cause can Toxic to aquati May cause lon May cause ha	cer by inhalation.
Safety phrases •	S53 - /		gloves. e - obtain special instructions before use. e containment to avoid environmental contamination.
2.3 Other Hazards			
	Accord hazard		ion (EC) No. 1272/2008 (CLP) this material is considered
DSD/DPD •	Accord	ling to Europe	an Directive 1999/45/EC this material is considered dangerous.

### United States (US) According to: OSHA 29 CFR 1910.1200 HCS

## 2.1 Classification of the substance or mixture

ated by further processing (grinding, sanding or polishing) bosure. The hazards represented below are based on dient. bity Repeated Exposure 2 unborn child. ns through prolonged or repeated exposure.
before use. y precautions have been read and understood. thing , and eye/face protection , .
Set medical advice/attention.
ontainer in accordance with local, regional, national, and/or
tions (29 CFR 1910.1200 - Hazard Communication onsidered hazardous.
a

### 2.1 Classification of the substance or mixture

WHMIS

 Contains Lead! Dusts generated by further processing (grinding, sanding or polishing) can be a source of lead exposure. The hazards represented below are based on exposure to the lead ingredient. Other Toxic Effects - D2A

2.2 Label elements

WHMIS

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Other Toxic Effects - D2A

WHMIS

- 2.3 Other hazards WHMIS
- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

# Section 3 - Composition/Information on Ingredients

# 3.1 Substances

• Material does not meet the criteria of a substance.

# 3.2 Mixtures

	Composition				
Chemical Name	Identifiers	%	LD50/LC50	C50 Classifications According to Regulation/Directive Com	
Vinyl toluene	<b>CAS</b> :25013- 15-4 <b>EINECS</b> :246- 562-2	77.3925% TO 95.2655%	Ingestion/Oral-Rat LD50 • 2255 mg/kg	<b>EU DSD/DPD:</b> Xi; R36/37/38; R67 <b>EU CLP:</b> Flam. Liq. 3, H226; Skin Irrit. 2, H315; STOT SE 3: Resp. Irrit., H335; STOT SE 3: Narc., H336; <b>OSHA HCS 2012:</b> Flam. Liq. 3; Eye Irrit. 2; Skin Irrit 2; STOT SE 3: Resp. Irrit.& Narc.	NDA
Lead	<b>CAS:</b> 1317- 36-8 <b>EINECS:</b> 215- 267-0	1.0519% TO 10.6658%	NDA	<b>EU DSD/DPD:</b> Annex VI, Table 3.2: Repr. Cat. 1; R61; Repr. Cat. 3; R62; Xn; R20/22; R33; N; R50-53; Carc 2; R49 <b>EU CLP:</b> Annex VI, Table 3.1: Carc. 1B, H350; Repr. 1A, H360Df; Acute Tox. 4*, H332; Acute Tox. 4*, H302; STOT RE 2*, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 <b>OSHA HCS 2012:</b> STOT RE 2 (Kidney, Blood, Brain, Nervous System); Carc. 1B; Repr. 1A;	NDA
Organic Fluors	Proprietary	0.3648% TO 3.7015%	NDA	EU DSD/DPD: T; R24 EU CLP: Acute Tox. 3, H311 OSHA HCS 2012: Acute Tox. 3 (skn)	NDA
Organic Fluors	Proprietary	0.3211% TO 3.2543%	Ingestion/Oral-Rat <u>LD50 • 900 mg/kg</u> Skin-Rabbit LD50 • 3160 mg/kg	<b>EU DSD/DPD:</b> Xn; R22; Xi; R36/38 <b>EU CLP:</b> Acute Tox. 4, H302; Skin Irrit. 2. H315; Eye Irrit. 2, H319 <b>OSHA HCS 2012:</b> Flam. Liq. 4; Acute Tox. 4 (orl); Skin Irrit. 2; Eye Irrit. 2	NDA
Organic Fluors	Proprietary	2.1666% TO 2.8608%	NDA	EU DSD/DPD: Not Classified EU CLP: Not Classified OSHA HCS 2012: Not Classified	NDA
Organic Fluors	Proprietary	0.271% TO 2.7438%	NDA	<b>EU DSD/DPD:</b> Annex VI, Table 3.2: Xn; R21/22; C; R35 <b>EU CLP:</b> Annex VI, Table 3.1: Acute Tox. 3 *, H311; Acute Tox. 4 *, H302 <b>OSHA HCS 2012:</b> Skin Corr. 1B; Eye Dam. 1; Acute Tox. 3 (skn); Acute Tox. 4 (orl)	NDA
Organic Fluors	Proprietary	0.026% TO 0.032%	Ingestion/Oral-Rat LD50 • 890 mg/kg	<b>EU CLP:</b> Community workplace exposure limit <b>OSHA HCS 2012:</b> Exposure limits	NDA
Organic Fluors	Proprietary	0% TO 0.0035%	Ingestion/Oral-Rat LD50 • >10 g/kg	EU CLP: Community workplace exposure limit OSHA HCS 2012: Exposure limits	NDA

# Section 4 - First Aid Measures

## 4.1 Description of first aid measures

Inhalation	• Move victim to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. Get medical attention.
Skin	<ul> <li>In case of contact with substance, immediately flush skin with running water for at least 20 minutes. If skin irritation occurs: Get medical advice/attention.</li> </ul>
Еуе	<ul> <li>In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.</li> </ul>
Ingestion	<ul> <li>Rinse mouth. Do not give anything by mouth to an unconscious person.</li> </ul>

## 4.2 Most important symptoms and effects, both acute and delayed

• Refer to Section 11 - Toxicological Information.

#### 4.3 Indication of any immediate medical attention and special treatment needed

#### Notes to Physician

• All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

#### **Section 5 - Firefighting Measures**

#### 5.1 Extinguishing media

Suitable Extinguishing Media	Water spray, carbon dioxide, foam or dry chemical.
Unsuitable Extinguishing Media	No data available.
5.2 Special hazards arisi	ng from the substance or mixture
Unusual Fire and Explosion Hazards	• Material is non-combustible and is not expected to pose a fire or explosion hazard. May emit toxic fumes when exposed to high heat.
Hazardous Combustion Products	No data available
5.3 Advice for firefighters	

• Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

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

#### 6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions	<ul> <li>Ventilate the area. Do not walk through spilled material. Wear appropriate personal</li> </ul>
	protective equipment, avoid direct contact. Do not touch damaged containers or spilled
	material unless wearing appropriate protective clothing.
Emergency Procedures	<ul> <li>As an immediate precautionary measure, isolate spill or leak area for at least 25</li> </ul>
	meters (75 feet) in all directions. If tank, rail car or tank truck is involved in a fire,
	ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for
	800 meters (1/2 mile) in all directions. Keep unauthorized personnel away.
6.2 Environmental press	utions.
6.2 Environmental preca	lutions

• Avoid release to the environment.

#### 6.3 Methods and material for containment and cleaning up

Containment/Clean-up<br/>Measures• Avoid generating dust.<br/>SMALL DRY SPILLS: With clean shovel place material into clean, dry container and<br/>cover loosely; move containers from spill area.<br/>LARGE SPILLS: Cover powder spill with plastic sheet or tarp to minimize spreading.

#### 6.4 Reference to other sections

Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

#### Section 7 - Handling and Storage

#### 7.1 Precautions for safe handling

#### Handling

• Use only with adequate ventilation. Wear appropriate personal protective equipment, avoid direct contact. Avoid contact with skin, eyes or clothing. Do not breathe dust. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

## 7.2 Conditions for safe storage, including any incompatibilities

Storage

- Keep container tightly closed. Store in a cool, dry, well-ventilated place.
- 7.3 Specific end use(s)
- Refer to Section 1.2 Relevant identified uses.

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

### 8.1 Control parameters

Exposure Limits/Guidelines				
	Result	ACGIH	NIOSH	OSHA
Organic Fluors (Proprietary)	TWAs	Not established	10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)
Organic Fluors (Proprietary)	TWAs	2 mg/m3 TWA (inhalable fraction and vapor)	10 mg/m3 TWA	Not established
Organic Fluors (Proprietary)	TWAs	20 ppm TWA	20 ppm TWA; 70 mg/m3 TWA	Not established
Lead	TWAs	Not established	0.050 mg/m3 TWA (as Pb) as Lead compounds	Not established
Vinyl toluene	TWAs	50 ppm TWA	100 ppm TWA; 480 mg/m3 TWA	100 ppm TWA; 480 mg/m3 TWA
(25013-15-4)	STELs	100 ppm STEL	Not established	Not established

### 8.2 Exposure controls

Engineering Measures/Controls	<ul> <li>Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.</li> </ul>
Personal Protective Equipm	nent
Respiratory	• For limited exposure use an N95 dust mask. For prolonged exposure use an air- purifying respirator with high efficiency particulate air (HEPA) filters. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.
Eye/Face	Wear safety goggles.
Skin/Body	Wear appropriate gloves.
Environmental Exposure Controls	<ul> <li>Follow best practice for site management and disposal of waste. Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.</li> </ul>

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

STEL = Short Term Exposure Limits are based on 15-minute exposures

## **Section 9 - Physical and Chemical Properties**

## 9.1 Information on Basic Physical and Chemical Properties

Physical Form	Solid	Appearance/Description	Clear, blue, fluorescent plastic
Color	Clear, blue.	Odor	Data lacking
Odor Threshold	Data lacking		
General Properties			
Boiling Point	Data lacking	Melting Point/Freezing Point	Data lacking
Decomposition Temperature	Data lacking	рН	Data lacking
Specific Gravity/Relative Density	> 1 Water=1	Water Solubility	Data lacking
Viscosity	Data lacking	Explosive Properties	Data lacking
Oxidizing Properties:	Data lacking		
Volatility	-		
Vapor Pressure	Data lacking	Vapor Density	Data lacking
Evaporation Rate	Data lacking		
Flammability	-		
Flash Point	Data lacking	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
Environmental	-		
Octanol/Water Partition coefficient	Data lacking		

## 9.2 Other Information

• No additional physical and chemical parameters noted.

### Section 10: Stability and Reactivity

### **10.1 Reactivity**

• No dangerous reaction known under conditions of normal use.

### **10.2 Chemical stability**

Stable

### 10.3 Possibility of hazardous reactions

• Hazardous polymerization will not occur.

#### 10.4 Conditions to avoid

• Temperatures over 300 degrees.

#### **10.5 Incompatible materials**

• No data available

### **10.6 Hazardous decomposition products**

• Toxic fumes of carbon monoxide carbon dioxide, lead, lead oxides.

### Section 11 - Toxicological Information

### 11.1 Information on toxicological effects

• Contains Lead! Dusts generated by further processing (grinding, sanding or polishing) can be a source of lead exposure. The hazards represented below are based on exposure to the lead ingredient.

	Components						
Vinyl toluene (77.3925% TO 95.2655%) Acute Toxicity: Ingestion/Oral-Rat LD50 • 2255 mg/kg; Sense Organs and Special Senses:Eye:Lacri Behavioral:Somnolence (general depressed activity); Skin and Appendages:Other:Hair; Irritation: Eye-Rabbit • 90 mg • Mild irritation; Skin-Rabbit • 100 % • Moderate irritation							
Lead (1.0519% TO 10.6658%)	1317-36-8	Irritation: Skin-Rabbit • 100 mg 24 Hour(s) • Mild irritation; Multi-dose Toxicity: Inhalation-Rat TCLo • 10 μg/m <sup>3</sup> 24 Hour(s) 22 Week(s)-Continuous; <i>Brain and</i> <i>Coverings</i> :Recordings from specific areas of CNS; <i>Blood</i> :Changes in bone marrow not included above; <i>Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels</i> :True cholinesterase; Reproductive: Ingestion/Oral-Mouse TDLo • 1750 mg/kg (5W male); <i>Reproductive Effects:Paternal</i> <i>Effects</i> :Spermatogenesis; <i>Reproductive Effects:Paternal Effects</i> :Testes, epididymis, sperm duct					
Organic Fluors (0.3211% TO 3.2543%)	Proprietary	Acute Toxicity: Ingestion/Oral-Rat LD50 • 900 mg/kg; Skin-Rabbit LD50 • 3160 mg/kg; Lungs, Thorax, or Respiration:Acute pulmonary edema; Liver:Other changes; Kidney, Ureter, and Bladder:Other changes; Multi-dose Toxicity: Skin-Rabbit TDLo • 300 mg/kg 14 Day(s)-Continuous; Skin and Appendages:After topical exposure:Primary irritation; Tumorigen / Carcinogen: Skin-Mouse TDLo • 188 mg/kg 47 Week(s)-Intermittent; Tumorigenic:Equivocal tumorigenic agent by RTECS criteria; Lungs, Thorax, or Respiration:Tumors; Skin and Appendages:Other:Tumors					
Organic Fluors (0.3648% TO 3.7015%)	Proprietary	Acute Toxicity: Ingestion/Oral-Rat LD50 • 2200 mg/kg; Skin-Rabbit LD50 • 520 μL/kg					
Organic Fluors (0.271% TO 2.7438%)	Proprietary	Acute Toxicity: Ingestion/Oral-Rat LD50 • 1060 mg/kg; Skin-Rabbit LD50 • 500 mg/kg					

GHS Properties	Classification
Acute toxicity	<b>EU/CLP</b> • Acute Toxicity - Inhalation 4 - ATEmix (Inhl) = 1.5 mg/l <b>OSHA HCS 2012</b> • Data lacking
Skin corrosion/Irritation	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Serious eye damage/Irritation	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Skin sensitization	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Respiratory sensitization	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Aspiration Hazard	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Carcinogenicity	EU/CLP • Carcinogenicity 1B OSHA HCS 2012 • Carcinogenicity 1B
Germ Cell Mutagenicity	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Toxicity for Reproduction	EU/CLP • Toxic to Reproduction 1A OSHA HCS 2012 • Toxic to Reproduction 1A
STOT-SE	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
STOT-RE	<b>EU/CLP</b> • Specific Target Organ Toxicity Repeated Exposure 2 <b>OSHA HCS 2012</b> • Specific Target Organ Toxicity Repeated Exposure 2

## **Potential Health Effects**

Acute (Immediate) Chronic (Delayed)Dust from this product may cause mechanical irritation.Chronic (Delayed)No data availableEyeAcute (Immediate)Excessive concentrations of nuisance dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.Chronic (Delayed)No data availableIngestionExcessive concentrations of dust in the workplace may cause mechanical irritation to mucous membranes.Chronic (Delayed)Excessive concentrations of dust in the workplace may cause mechanical irritation to mucous membranes.Chronic (Delayed)No data availableOtherNo data availableChronic (Delayed)No data availableOtherMay cause damage to organs through prolonged or repeated exposure. The onset of symptoms of chronic lead poisoning often is gradual. The major organ systems affected re the nervous system, red blood cells, and kidneys; Anemia is an early indication of chronic exposure to lead.	Inhalation	
Skin       Acute (Immediate)       Dust from this product may cause mechanical irritation.         Chronic (Delayed)       No data available         Eye       Acute (Immediate)       Excessive concentrations of nuisance dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.         Chronic (Delayed)       No data available         Ingestion       No data available         Acute (Immediate)       Excessive concentrations of dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.         Chronic (Delayed)       No data available         Ingestion       Excessive concentrations of dust in the workplace may cause mechanical irritation to mucous membranes.         Chronic (Delayed)       No data available         Other       No data available         Chronic (Delayed)       No data available         Other       May cause damage to organs through prolonged or repeated exposure. The onset of symptoms of chronic lead poisoning often is gradual. The major organ systems affected re the nervous system, red blood cells, and kidneys; Anemia is an early indication of chronic exposure to lead.	Acute (Immediate)	Harmful if inhaled.
Acute (Immediate) Chronic (Delayed)Dust from this product may cause mechanical irritation.Chronic (Delayed)No data availableEyeAcute (Immediate)Excessive concentrations of nuisance dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.Chronic (Delayed)No data availableIngestionExcessive concentrations of dust in the workplace may cause mechanical irritation to mucous membranes.Chronic (Delayed)Excessive concentrations of dust in the workplace may cause mechanical irritation to mucous membranes.Chronic (Delayed)No data availableOtherNo data availableChronic (Delayed)No data availableOtherMay cause damage to organs through prolonged or repeated exposure. The onset of symptoms of chronic lead poisoning often is gradual. The major organ systems affected re the nervous system, red blood cells, and kidneys; Anemia is an early indication of chronic exposure to lead.	Chronic (Delayed)	No data available
Chronic (Delayed)No data availableEyeAcute (Immediate)Excessive concentrations of nuisance dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.Chronic (Delayed)No data availableIngestionExcessive concentrations of dust in the workplace may cause mechanical irritation to mucous membranes.Chronic (Delayed)Excessive concentrations of dust in the workplace may cause mechanical irritation to mucous membranes.Chronic (Delayed)No data availableOtherNo data availableChronic (Delayed)May cause damage to organs through prolonged or repeated exposure. The onset of symptoms of chronic lead poisoning often is gradual. The major organ systems affected re the nervous system, red blood cells, and kidneys; Anemia is an early indication of chronic exposure to lead.	Skin	
EyeAcute (Immediate)• Excessive concentrations of nuisance dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.Chronic (Delayed)• No data availableIngestion• Excessive concentrations of dust in the workplace may cause mechanical irritation to mucous membranes.Chronic (Delayed)• Excessive concentrations of dust in the workplace may cause mechanical irritation to mucous membranes.Chronic (Delayed)• No data availableOther• No data availableOther• May cause damage to organs through prolonged or repeated exposure. The onset of symptoms of chronic lead poisoning often is gradual. The major organ systems affected re the nervous system, red blood cells, and kidneys; Anemia is an early indication of chronic exposure to lead.	Acute (Immediate)	<ul> <li>Dust from this product may cause mechanical irritation.</li> </ul>
Acute (Immediate)• Excessive concentrations of nuisance dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.Chronic (Delayed)• No data availableIngestion Acute (Immediate)• Excessive concentrations of dust in the workplace may cause mechanical irritation to mucous membranes.Chronic (Delayed)• Excessive concentrations of dust in the workplace may cause mechanical irritation to mucous membranes.Other Chronic (Delayed)• No data availableOther symptoms of chronic lead poisoning often is gradual. The major organ systems affected re the nervous system, red blood cells, and kidneys; Anemia is an early indication of chronic exposure to lead.	Chronic (Delayed)	No data available
Chronic (Delayed).Ingestion.Acute (Immediate).Chronic (Delayed).Chronic (Delayed).Other.Chronic (Delayed).May cause damage to organs through prolonged or repeated exposure. The onset of symptoms of chronic lead poisoning often is gradual. The major organ systems affected re the nervous system, red blood cells, and kidneys; Anemia is an early indication of chronic exposure to lead.	Eye	
IngestionAcute (Immediate)• Excessive concentrations of dust in the workplace may cause mechanical irritation to mucous membranes.Chronic (Delayed)• No data availableOther Chronic (Delayed)• May cause damage to organs through prolonged or repeated exposure. The onset of symptoms of chronic lead poisoning often is gradual. The major organ systems affected re the nervous system, red blood cells, and kidneys; Anemia is an early indication of chronic exposure to lead.	Acute (Immediate)	
Acute (Immediate)• Excessive concentrations of dust in the workplace may cause mechanical irritation to mucous membranes.Chronic (Delayed)• No data availableOther Chronic (Delayed)• May cause damage to organs through prolonged or repeated exposure. The onset of symptoms of chronic lead poisoning often is gradual. The major organ systems affected re the nervous system, red blood cells, and kidneys; Anemia is an early indication of chronic exposure to lead.	Chronic (Delayed)	No data available
Chronic (Delayed)• No data availableOther Chronic (Delayed)• May cause damage to organs through prolonged or repeated exposure. The onset of symptoms of chronic lead poisoning often is gradual. The major organ systems affected re the nervous system, red blood cells, and kidneys; Anemia is an early indication of chronic exposure to lead.	Ingestion	
Other       • May cause damage to organs through prolonged or repeated exposure. The onset of symptoms of chronic lead poisoning often is gradual. The major organ systems affected re the nervous system, red blood cells, and kidneys; Anemia is an early indication of chronic exposure to lead.	Acute (Immediate)	
<ul> <li>Chronic (Delayed)</li> <li>May cause damage to organs through prolonged or repeated exposure. The onset of symptoms of chronic lead poisoning often is gradual. The major organ systems affected re the nervous system, red blood cells, and kidneys; Anemia is an early indication of chronic exposure to lead.</li> </ul>	Chronic (Delayed)	No data available
symptoms of chronic lead poisoning often is gradual. The major organ systems affected re the nervous system, red blood cells, and kidneys; Anemia is an early indication of chronic exposure to lead.	Other	
Carcinogenic Effects • May cause cancer.	Chronic (Delayed)	symptoms of chronic lead poisoning often is gradual. The major organ systems affected re the nervous system, red blood cells, and kidneys; Anemia is an early
	Carcinogenic Effects	May cause cancer.

Carcinogenic Effects						
	CAS	IARC	NTP			
Lead	1317-36-8	Group 2A-Probable Carcinogen	Not Listed			
Lead as Lead compounds	NDA	Not Listed	Reasonably Anticipated to be Human Carcinogen			
<b>Benroductive Effects</b>						

Reproductive Effects

• May damage the unborn child. Suspected of damaging fertility.

# Section 12 - Ecological Information

## 12.1 Toxicity

	CAS	
Plastic Scintillators with lead	NDA	Aquatic Toxicity-Fish: 96 Hour(s) Fathead minnow - Pimephales promelas 0.298 mg/L Comments: Lead 1317-36-8

• Toxic to aquatic life with long lasting effects.

## 12.2 Persistence and degradability

Material data lacking.

## 12.3 Bioaccumulative potential

- Material data lacking.
- 12.4 Mobility in Soil
- Material data lacking.

## 12.5 Results of PBT and vPvB assessment

• No PBT and vPvB assessment has been conducted.

## 12.6 Other adverse effects

• No studies have been found.

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

#### 13.1 Waste treatment methods

- **Product waste**
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste

Dispose of content and/or container in accordance with local, regional, national, and/or ٠ international regulations.

### Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	NDA	Not Regulated	NDA	NDA	NDA
TDG	NDA	Not Regulated	NDA	NDA	NDA
IMO/IMDG	NDA	Not Regulated	NDA	NDA	NDA
IATA/ICAO	NDA	Not Regulated	NDA	NDA	NDA

14.6 Special precautions for user

• None specified.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code Data lacking.

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

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### SARA Hazard Classifications • Chronic

	State Right To Know				
Component	CAS	PA			
Organic Fluors	Proprietary	Yes			
Organic Fluors	Proprietary	No			
Organic Fluors	Proprietary	Yes			
Lead	1317-36-8	No			
Organic Fluors	Proprietary	Yes			
Organic Fluors	Proprietary	No			
Vinyl toluene	25013-15-4	Yes			
Organic Fluors	Proprietary	Yes			

Inventory						
Component	CAS	Canada DSL	Canada NDSL	EU EINECS	EU ELNICS	Korea KECL
Organic Fluors	Proprietary	Yes	No	Yes	No	Yes
Organic Fluors	Proprietary	No	Yes	Yes	No	No
Organic Fluors	Proprietary	Yes	No	Yes	No	Yes
Lead	1317-36-8	Yes	No	Yes	No	Yes
Organic Fluors	Proprietary	Yes	No	Yes	No	Yes
	1 1		1			

Organic Fluors	Proprietary	Yes	No	Yes	No	No	
Vinyl toluene	25013-15-4	Yes	No	Yes	No	Yes	
Organic Fluors	Proprietary	Yes	No	Yes	No	Yes	
			Inventory (Co	n't.)			
	Component		CAS		TSCA		
Organic Fluors		Pro	oprietary		Yes		
Organic Fluors			oprietary		Yes		
Organic Fluors		Pro	oprietary		Yes		
Lead		13 <sup>-</sup>	17-36-8		Yes		
Organic Fluors		Pro	Proprietary Yes		Yes		
Organic Fluors		Pro	Proprietary		Yes		
Vinyl toluene		250	25013-15-4		Yes		
Organic Fluors			prietary	Yes			

### Canada

_abor Canada - WHMIS - Classifications of Substances		
Vinyl toluene	25013-15-4	B3, D2B
• Lead	1317-36-8	D2A
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	B3, D1B, E, F
Organic Fluors	Proprietary	Uncontrolled product according to WHMIS classification criteria
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Canada - WHMIS - Ingredient Disclosure List		
Vinyl toluene	25013-15-4	1 %
• Lead	1317-36-8	1 %
Organic Fluors	Proprietary	1 %
Organic Fluors	Proprietary	1 %
Organic Fluors	Proprietary	1 %
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	1 %
Organic Fluors	Proprietary	Not Listed

#### Environment

Canada - CEPA - Priority Substances List		
Vinyl toluene	25013-15-4	Not Listed
• Lead	1317-36-8	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed

# **United States**

Labor		
U.S OSHA - Process Safety Management - Highly Hazardous Chemicals		
Vinyl toluene	25013-15-4	Not Listed
• Lead	1317-36-8	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
U.S OSHA - Specifically Regulated Chemicals		
Vinyl toluene	25013-15-4	Not Listed
• Lead	1317-36-8	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Environment		
U.S CAA (Clean Air Act) - 1990 Hazardous Air Pollutants		
Vinyl toluene	25013-15-4	Not Listed
• Lead	1317-36-8	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
U.S CERCLA/SARA - Hazardous Substances and their Reportable Quantit	ies	
Vinyl toluene	25013-15-4	Not Listed
• Lead	1317-36-8	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
U.S CERCLA/SARA - Radionuclides and Their Reportable Quantities		
Vinyl toluene	25013-15-4	Not Listed
• Lead	1317-36-8	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
U.S CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA		
Vinyl toluene	25013-15-4	Not Listed
• Lead	1317-36-8	Not Listed

Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
U.S CERCLA/SARA - Section 302 Extremely Hazardous Subs	tances TPQs	
Vinyl toluene	25013-15-4	Not Listed
• Lead	1317-36-8	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
U.S CERCLA/SARA - Section 313 - Emission Reporting		
Vinyl toluene	25013-15-4	Not Listed
• Lead	1317-36-8	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
U.S CERCLA/SARA - Section 313 - PBT Chemical Listing		
Vinyl toluene	25013-15-4	Not Listed
• Lead	1317-36-8	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed

## **United States - California**

#### Environment-

U.S California - Proposition 65 - Carcinogens List		
Vinyl toluene	25013-15-4	Not Listed
• Lead	1317-36-8	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
U.S California - Proposition 65 - Developmental Toxicity		
Vinyl toluene	25013-15-4	Not Listed
• Lead	1317-36-8	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed

Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
U.S California - Proposition 65 - Maximum Allowable Dose Levels (MADL)		
Vinyl toluene	25013-15-4	Not Listed
• Lead	1317-36-8	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
U.S California - Proposition 65 - No Significant Risk Levels (NSRL)		
Vinyl toluene	25013-15-4	Not Listed
• Lead	1317-36-8	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
U.S California - Proposition 65 - Reproductive Toxicity - Female		
U.S California - Proposition 65 - Reproductive Toxicity - Female • Vinyl toluene	25013-15-4	Not Listed
<ul> <li>U.S California - Proposition 65 - Reproductive Toxicity - Female</li> <li>Vinyl toluene</li> <li>Lead</li> </ul>		Not Listed Not Listed
<ul><li>Vinyl toluene</li><li>Lead</li></ul>	1317-36-8	Not Listed
<ul><li>Vinyl toluene</li><li>Lead</li><li>Organic Fluors</li></ul>	1317-36-8 Proprietary	Not Listed Not Listed
<ul> <li>Vinyl toluene</li> <li>Lead</li> <li>Organic Fluors</li> <li>Organic Fluors</li> </ul>	1317-36-8 Proprietary Proprietary	Not Listed Not Listed Not Listed
<ul> <li>Vinyl toluene</li> <li>Lead</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> </ul>	1317-36-8 Proprietary Proprietary Proprietary	Not Listed Not Listed Not Listed Not Listed
<ul> <li>Vinyl toluene</li> <li>Lead</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> </ul>	1317-36-8 Proprietary Proprietary Proprietary Proprietary	Not Listed Not Listed Not Listed
<ul> <li>Vinyl toluene</li> <li>Lead</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> </ul>	1317-36-8 Proprietary Proprietary Proprietary	Not Listed Not Listed Not Listed Not Listed Not Listed
<ul> <li>Vinyl toluene</li> <li>Lead</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> </ul>	1317-36-8 Proprietary Proprietary Proprietary Proprietary Proprietary	Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed
<ul> <li>Vinyl toluene</li> <li>Lead</li> <li>Organic Fluors</li> <li>U.S California - Proposition 65 - Reproductive Toxicity - Male</li> </ul>	1317-36-8 Proprietary Proprietary Proprietary Proprietary Proprietary	Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed
<ul> <li>Vinyl toluene</li> <li>Lead</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> </ul>	1317-36-8 Proprietary Proprietary Proprietary Proprietary Proprietary	Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed
<ul> <li>Vinyl toluene</li> <li>Lead</li> <li>Organic Fluors</li> <li>U.S California - Proposition 65 - Reproductive Toxicity - Male</li> <li>Vinyl toluene</li> <li>Lead</li> </ul>	1317-36-8 Proprietary Proprietary Proprietary Proprietary Proprietary 25013-15-4 1317-36-8	Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed
<ul> <li>Vinyl toluene</li> <li>Lead</li> <li>Organic Fluors</li> <li>Vinyl toluene</li> <li>Lead</li> <li>Organic Fluors</li> </ul>	1317-36-8 Proprietary Proprietary Proprietary Proprietary Proprietary 25013-15-4 1317-36-8 Proprietary	Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed
<ul> <li>Vinyl toluene</li> <li>Lead</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>U.S California - Proposition 65 - Reproductive Toxicity - Male</li> <li>Vinyl toluene</li> <li>Lead</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> </ul>	1317-36-8 Proprietary Proprietary Proprietary Proprietary Proprietary 25013-15-4 1317-36-8 Proprietary Proprietary	Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed
<ul> <li>Vinyl toluene</li> <li>Lead</li> <li>Organic Fluors</li> <li>U.S California - Proposition 65 - Reproductive Toxicity - Male</li> <li>Vinyl toluene</li> <li>Lead</li> <li>Organic Fluors</li> </ul>	1317-36-8 Proprietary Proprietary Proprietary Proprietary Proprietary 25013-15-4 1317-36-8 Proprietary Proprietary Proprietary	Not Listed Not Listed
<ul> <li>Vinyl toluene</li> <li>Lead</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>U.S California - Proposition 65 - Reproductive Toxicity - Male</li> <li>Vinyl toluene</li> <li>Lead</li> <li>Organic Fluors</li> <li>Organic Fluors</li> <li>Organic Fluors</li> </ul>	1317-36-8 Proprietary Proprietary Proprietary Proprietary Proprietary 25013-15-4 1317-36-8 Proprietary Proprietary	Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed Not Listed

## United States - Pennsylvania

Labor U.S Pennsylvania - RTK (Right to Know) - Environmental Ha	azard List	
Vinyl toluene	25013-15-4	Not Listed
• Lead	1317-36-8	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	
Organic Fluors	Proprietary	Not Listed

Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
U.S Pennsylvania - RTK (Right to Know) - Special Hazardous Sub-	stances	
Vinyl toluene	25013-15-4	Not Listed
• Lead	1317-36-8	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed
Organic Fluors	Proprietary	Not Listed

## **15.2 Chemical Safety Assessment**

• No Chemical Safety Assessment has been carried out.

### **15.3 Other Information**

• WARNING: This product contains a lead compound chemical known to the State of California to cause cancer.

Section 16 - Other Information		
Revision Date	• 22/May/2023	
Preparation Date	• 01/June/2015	
Disclaimer/Statement of Liability	<ul> <li>Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgement.</li> </ul>	
Key to abbreviations		

NDA = No data available