


## DENNARD PU EXPANSIBLE FIRE RATED STRAW FOAM-755ML

### SECTION I: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1	<b>Product Identifier</b>	DENNARD PU EXPANSIBLE FIRE RATED STRAW FOAM 755ML
1.2	<b>Relevant identified uses of the substance or mixture and uses advised against</b>	Relevant Uses: Foam Uses advised against: All uses not specified in this section or in section 7.3
1.3	<b>Details of the supplier of the safety data sheet</b>	DENNARD INDUSTRIAL PRODUCTS B.V. Unit No. 2.7A , Europalaan 16, 2408BG , Alphen Aan Den Rijn. Netherlands. Tel: 0031 (0) 172748960 Fax: 0031 (0) 172748969 Email: info@dennard.nl www.dennard.nl

### SECTION II: HAZARD IDENTIFICATION

2.1	<b>Classification of the substance or mixture CLP Regulation (EC) n° 1272/2008</b>	Classification of this product has been carried out in accordance with CLP Regulation (EC) n° 1272/2008. Acute Tox. 4: Acute toxicity, Category 4, H302+H332 Aerosol 1: Pressurised container: May burst if heated., H229 Aerosol 1: Flammable aerosols, Category 1, H222 Carc. 2: Carcinogenicity, Category 2, H351 Eye Irrit. 2: Eye irritation, Category 2, H319 Resp. Sens. 1: Sensitisation, respiratory, Category 1, H334 Skin Irrit. 2: Skin irritation, Category 2, H315 Skin Sens. 1: Sensitisation, skin, Category 1, H317 STOT RE 2: Specific target organ toxicity, repeated exposure, Category 2, H373 STOT SE 3: Respiratory tract toxicity, single exposure, Category 3, H335
2.2	<b>Label elements CLP Regulation (EC) n° 1272/2008</b>	Danger:   Hazard Statements: Acute Tox. 4: H302+H332 - Harmful if swallowed or if inhaled Aerosol 1: H229 - Pressurised container: May burst if heated Aerosol 1: H222 - Extremely flammable aerosol Carc. 2: H351 - Suspected of causing cancer Eye Irrit. 2: H319 - Causes serious eye irritation Resp. Sens. 1: H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled Skin Irrit. 2: H315 - Causes skin irritation Skin Sens. 1: H317 - May cause an allergic skin reaction STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure STOT SE 3: H335 - May cause respiratory irritation P280: Wear protective gloves/protective clothing/eye protection/face protection P302+P352: IF ON SKIN: Wash with plenty of water P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P410+P412: Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122°F P501: Dispose of the contents/containers in accordance with the current legislation on waste treatment  <b>Supplementary information:</b> EUH204: Contains isocyanates. May produce an allergic reaction

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		<p><b>Substances that contribute to the classification</b> 4,4'-methylenediphenyl diisocyanate, isomers and homologues; Tris(1-chloro-2-propyl) Phosphate; Polymer with 2-Butyne-1,4-Diol and (Chloromethyl-)Oxirane, Brominated, Dehydrochlorinated, Methoxylated; Triethyl phosphate</p> <p><b>Additional Labelling (Annex XVII, REACH):</b> Persons already sensitised to diisocyanates may develop allergic reactions when using this product. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used.</p>
2.3	<b>Other hazards:</b>	Non-applicable

### SECTION III: COMPOSITION / INFORMATION ON INGREDIENT

3.1	<b>Substance</b>	Non-Applicable																											
3.2	<b>Mixture</b>	<p><b>Chemical Description:</b> Mixture composed of polyurethane in solvents</p> <p><b>Components:</b> In accordance with Annex II of Regulation (EC) n°1907/2006 (point 3), the product contains:</p> <table border="1"> <thead> <tr> <th>Identification</th> <th>Chemical Name/Classification</th> <th>Concentration</th> </tr> </thead> <tbody> <tr> <td>CAS: 9016-87-9 EC: Non-applicable Index: 615-005-00-9 REACH Non-applicable</td> <td><b>4,4'-methylenediphenyl diisocyanate, isomers and homologues</b> Regulation 1272/2008 Acute Tox. 4: H332; Carc. 2: H351; Eye Irrit. 2: H319; Resp. Sens. 1: H334; Skin Irrit. 2: H315; Skin Sens. 1: H317; STOT RE 2: H373; STOT SE 3: H335 - Danger</td> <td>ATP ATP01 30 - &lt;50 %</td> </tr> <tr> <td>CAS: 13674-84-5 EC: 237-158-7 Index: Non-applicable REACH 01-2119480419-30-XXXX</td> <td><b>Tris(1-chloro-2-propyl) Phosphate</b> Regulation 1272/2008 Acute Tox. 4: H302 - Warning</td> <td>Self Classified 10 - &lt;20 %</td> </tr> <tr> <td>CAS: 86675-46-9 EC: Non-applicable Index: Non-applicable REACH Non-applicable</td> <td><b>Polymer with 2-Butyne-1,4-Diol and (Chloromethyl-)Oxirane, Brominated, Dehydrochlorinated, Methoxylated</b> Regulation 1272/2008 Acute Tox. 4: H302 - Warning</td> <td>Self Classified 10 - &lt;20 %</td> </tr> <tr> <td>CAS: 75-28-5 EC: 200-857-2 Index: 601-004-00-0 REACH 01-2119485395-27-XXXX</td> <td><b>Isobutane</b> Regulation 1272/2008 Flam. Gas 1: H220; Press. Gas: H280 - Danger</td> <td>ATP CLP00 5 - &lt;10 %</td> </tr> <tr> <td>CAS: 115-10-6 EC: 204-065-8 Index: 603-019-00-8 REACH 01-2119472128-37-XXXX</td> <td><b>Dimethyl ether</b> Regulation 1272/2008 Flam. Gas 1: H220; Press. Gas: H280 - Danger</td> <td>ATP CLP00 2,5 - &lt;5 %</td> </tr> <tr> <td>CAS: 78-40-0 EC: 201-114-5 Index: 015-013-00-7 REACH 01-2119492852-28-XXXX</td> <td><b>Triethyl phosphate</b> Regulation 1272/2008 Acute Tox. 4: H302; Eye Irrit. 2: H319 - Warning</td> <td>Self Classified 1 - &lt;2,5 %</td> </tr> <tr> <td>CAS: 74-98-6 EC: 200-827-9 Index: 601-003-00-5 REACH 01-2119486944-21-XXXX</td> <td><b>Propane</b> Regulation 1272/2008 Flam. Gas 1: H220; Press. Gas: H280 - Danger</td> <td>ATP CLP00 1 - &lt;2,5 %</td> </tr> <tr> <td>CAS: 106-97-8 EC: 203-448-7 Index: 601-004-00-0 REACH 01-2119474691-32-XXXX</td> <td><b>Butane</b> Regulation 1272/2008 Flam. Gas 1: H220; Press. Gas: H280 - Danger</td> <td>ATP CLP00 0,1 - &lt;1 %</td> </tr> </tbody> </table> <p>To obtain more information on the risk of the substances consult sections 8, 11, 12, 15 and 16.</p>	Identification	Chemical Name/Classification	Concentration	CAS: 9016-87-9 EC: Non-applicable Index: 615-005-00-9 REACH Non-applicable	<b>4,4'-methylenediphenyl diisocyanate, isomers and homologues</b> Regulation 1272/2008 Acute Tox. 4: H332; Carc. 2: H351; Eye Irrit. 2: H319; Resp. Sens. 1: H334; Skin Irrit. 2: H315; Skin Sens. 1: H317; STOT RE 2: H373; STOT SE 3: H335 - Danger	ATP ATP01 30 - <50 %	CAS: 13674-84-5 EC: 237-158-7 Index: Non-applicable REACH 01-2119480419-30-XXXX	<b>Tris(1-chloro-2-propyl) Phosphate</b> Regulation 1272/2008 Acute Tox. 4: H302 - Warning	Self Classified 10 - <20 %	CAS: 86675-46-9 EC: Non-applicable Index: Non-applicable REACH Non-applicable	<b>Polymer with 2-Butyne-1,4-Diol and (Chloromethyl-)Oxirane, Brominated, Dehydrochlorinated, Methoxylated</b> Regulation 1272/2008 Acute Tox. 4: H302 - Warning	Self Classified 10 - <20 %	CAS: 75-28-5 EC: 200-857-2 Index: 601-004-00-0 REACH 01-2119485395-27-XXXX	<b>Isobutane</b> Regulation 1272/2008 Flam. Gas 1: H220; Press. Gas: H280 - Danger	ATP CLP00 5 - <10 %	CAS: 115-10-6 EC: 204-065-8 Index: 603-019-00-8 REACH 01-2119472128-37-XXXX	<b>Dimethyl ether</b> Regulation 1272/2008 Flam. Gas 1: H220; Press. Gas: H280 - Danger	ATP CLP00 2,5 - <5 %	CAS: 78-40-0 EC: 201-114-5 Index: 015-013-00-7 REACH 01-2119492852-28-XXXX	<b>Triethyl phosphate</b> Regulation 1272/2008 Acute Tox. 4: H302; Eye Irrit. 2: H319 - Warning	Self Classified 1 - <2,5 %	CAS: 74-98-6 EC: 200-827-9 Index: 601-003-00-5 REACH 01-2119486944-21-XXXX	<b>Propane</b> Regulation 1272/2008 Flam. Gas 1: H220; Press. Gas: H280 - Danger	ATP CLP00 1 - <2,5 %	CAS: 106-97-8 EC: 203-448-7 Index: 601-004-00-0 REACH 01-2119474691-32-XXXX	<b>Butane</b> Regulation 1272/2008 Flam. Gas 1: H220; Press. Gas: H280 - Danger	ATP CLP00 0,1 - <1 %
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### SECTION IV: FIRST AID MEASURES

4.1	<b>Description of first aid measures</b>	<p>The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.</p> <p><b>By inhalation:</b> Remove the person affected from the area of exposure, provide with fresh air and keep at rest. In serious cases such as cardiorespiratory failure, artificial resuscitation techniques will be necessary (mouth to mouth resuscitation, cardiac massage, oxygen supply, etc.) requiring immediate medical assistance.</p> <p><b>By skin contact:</b> Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.</p> <p><b>By eye contact:</b> Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.</p> <p><b>By ingestion/aspiration:</b> Request medical assistance immediately, showing the SDS of this product. Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. In the case of loss of consciousness do not administrate anything orally unless supervised by a doctor. Rinse out the mouth and throat, as they may have been affected during ingestion. Keep the person affected at rest.</p>
4.2	<b>Most important symptoms and effects, both acute and delayed</b>	Acute and delayed effects are indicated in sections 2 and 11.
4.3	<b>Indication of any immediate medical attention and special treatment needed</b>	Non-applicable

### SECTION V: FIREFIGHTING MEASURES

5.1	<b>Extinguishing media</b>	If possible use polyvalent powder fire extinguishers (ABC powder), alternatively use foam or carbon dioxide extinguishers (CO <sub>2</sub> ). IT IS RECOMMENDED NOT to use tap water as an extinguishing agent.
5.2	<b>Special hazards arising from the substance or mixture</b>	As a result of combustion or thermal decomposition reactive sub-products is created that can become highly toxic and, consequently, can present a serious health risk.
5.3	<b>Advice for firefighters</b>	<p>Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...) in accordance with Directive 89/654/EC.</p> <p><b>Additional provisions:</b> Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.</p>

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### SECTION VI: ACCIDENTAL RELEASE MEASURES

6.1	<b>Personal precautions, protective equipment and emergency procedures</b>	Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilled product (See section 8). Evacuate the area and keep out those who do not have protection.
6.2	<b>Environmental precautions</b>	This product is not classified as hazardous to the environment. Keep product away from drains, surface and underground water.
6.3	<b>Methods and material for containment and cleaning up</b>	It is recommended: Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.
6.4	<b>Reference to other sections</b>	See sections 8 and 13.



### SECTION VII: HANDLING AND STORAGE

7.1	<b>Precautions for safe handling</b>	<p><b>A: Precautions for safe manipulation</b> Comply with the current legislation concerning the prevention of industrial risks. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.</p> <p><b>B: Technical recommendations for the prevention of fires and explosions</b> Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.</p> <p><b>C: Technical recommendations to prevent ergonomic and toxicological risks</b> Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.</p> <p><b>D: Technical recommendations to prevent environmental risks</b> It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)</p>
7.2	<b>Conditions for safe storage, including any incompatibilities</b>	<p><b>A: Technical measures for storage</b> Minimum Temp.: 5 °C Maximum Temp.: 30 °C</p> <p><b>B: General conditions for storage</b> Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5</p>
7.3	<b>Specific end use(s):</b>	Field of application of the product is described in Technical data sheet (TDS).

### SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION



8.1	<b>Control parameters</b>	Substances whose occupational exposure limits have to be monitored in the work environment			
		<b>IDENTIFICATION</b>	<b>ENVIRONMENTAL LIMITS</b>		
		Dimethyl ether	IOELV (8h)	1000 ppm	1920 mg/m <sup>3</sup>
		CAS: 115-10-6	IOELV (STEL)		
	EC: 204-065-8	Year	2015		

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		<b>DNEL (Workers):</b>				
		<b>IDENTIFICATION</b>	<b>SHORT EXPOSURE</b>		<b>LONG EXPOSURE</b>	
			<b>SYSTEMIC</b>	<b>LOCAL</b>	<b>SYSTEMIC</b>	<b>LOCAL</b>
Dimethyl ether CAS: 115-10-6 EC: 204-065-8	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable	
	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable	
	Inhalation	Non-applicable	Non-applicable	1894 mg/m <sup>3</sup>	Non-applicable	
Triethyl phosphate CAS: 78-40-0 EC: 201-114-5	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable	
	Dermal	26.6 mg/kg	Non-applicable	3.33 mg/kg	Non-applicable	
	Inhalation	93.6 mg/m <sup>3</sup>	93.6 mg/m <sup>3</sup>	11.7 mg/m <sup>3</sup>	11.7 mg/m <sup>3</sup>	
<b>DNEL(General Population):</b>						
<b>IDENTIFICATION</b>	<b>SHORT EXPOSURE</b>		<b>LONG EXPOSURE</b>			
	<b>SYSTEMIC</b>	<b>LOCAL</b>	<b>SYSTEMIC</b>	<b>LOCAL</b>		
Dimethyl ether CAS: 115-10-6 EC: 204-065-8	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable	
	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable	
	Inhalation	Non-applicable	Non-applicable	471 mg/m <sup>3</sup>	Non-applicable	
Triethyl phosphate CAS: 78-40-0 EC: 201-114-5	Oral	13.3 mg/kg	Non-applicable	1.66 mg/kg	Non-applicable	
	Dermal	13.3 mg/kg	Non-applicable	1.66 mg/kg	Non-applicable	
	Inhalation	23.12 mg/m <sup>3</sup>	23.12 mg/m <sup>3</sup>	2.89 mg/m <sup>3</sup>	23.12 mg/m <sup>3</sup>	
<b>PNEC:</b>						
<b>IDENTIFICATION</b>	<b>STP</b>	<b>Non-applicable</b>	<b>Fresh Water</b>	<b>0.42 mg/L</b>		
	<b>Soil</b>	<b>1.33 mg/kg</b>	<b>Marine Water</b>	<b>0.42 mg/L</b>		
Tris(1-chloro-2-propyl) Phosphate CAS: 13674-84-5 EC: 237-158-7	<b>Intermittent</b>	<b>Non-applicable</b>	<b>Sediment (Fresh water)</b>	<b>2.96 mg/kg</b>		
	<b>Oral</b>	<b>Non-applicable</b>	<b>Sediment (Marine water)</b>	<b>2.96 mg/kg</b>		
Dimethyl ether CAS: 115-10-6 EC: 204-065-8	<b>STP</b>	<b>160 mg/L</b>	<b>Fresh Water</b>	<b>0.155 mg/L</b>		
	<b>Soil</b>	<b>0.045 mg/kg</b>	<b>Marine Water</b>	<b>0.016 mg/L</b>		
	<b>Intermittent</b>	<b>1.549 mg/L</b>	<b>Sediment (Fresh water)</b>	<b>0.681 mg/kg</b>		
	<b>Oral</b>	<b>Non-applicable</b>	<b>Sediment (Marine water)</b>	<b>0.069 mg/kg</b>		
Triethyl phosphate CAS: 78-40-0 EC: 201-114-5	<b>STP</b>	<b>298.5 mg/L</b>	<b>Fresh Water</b>	<b>0.632 mg/L</b>		
	<b>Soil</b>	<b>Non-applicable</b>	<b>Marine Water</b>	<b>Non-applicable</b>		
	<b>Intermittent</b>	<b>Non-applicable</b>	<b>Sediment (Fresh water)</b>	<b>Non-applicable</b>		
	<b>Oral</b>	<b>Non-applicable</b>	<b>Sediment (Marine water)</b>	<b>Non-applicable</b>		
8.2	<b>Exposure controls:</b>	<b>A: General security and hygiene measures in the work place</b>				
		<p>In accordance with the order of importance to control professional exposure (Directive 98/24/EC) it is recommended to use localized extraction in the work area as a collective protection measure to avoid exceeding the professional exposure limits. In case of using individual protection equipment they should have the CE marking in accordance with Directive 89/686/EC. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For additional information see subsection 7.1.</p> <p>All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.</p>				
		<b>B: Respiratory protection</b>				
		<b>Pictogram</b>	<b>PPE</b>	<b>Labelling</b>	<b>CEN Standard</b>	
		 Mandatory respiratory tract protection	Filter mask for gases, vapours and particles		EN 149:2001+A1:2009 EN 405:2001+A1:2009	
				<b>Remarks</b>		
				Replace when an increase in resistance to breathing is observed and/or a smell or taste of the contaminant is detected.		

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**C: Specific Protection for the hands:**

Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory hand protection	NON-disposable chemical protective gloves		EN 374-1:2003 EN 374-3:2003/AC:2006 EN 420:2003+A1:2009	The Breakthrough Time indicated by the manufacturer must exceed the period during which the product is being used. Do not use protective creams after the product has come into contact with skin.



**D: Ocular and facial protection**

Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory face protection	Face Mask		EN 166:2001 EN 167:2001 EN 168:2001 EN ISO 4007:2012	Clean daily and disinfect periodically according to the manufacturer's instructions. Use if there is a risk of splashing.

**E: Bodily Protection**

Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory complete body protection	Disposable clothing for protection against chemical risks, with antistatic and fireproof properties		EN 1149-1,2,3 EN 13034:2005+A1:2009 EN ISO 13982-1:2004/A1:2010 EN ISO 6529:2001 EN ISO 6530:2005 EN ISO 13688:2013 EN 464:1994	For professional use only. Clean periodically according to the manufacturer's instructions.
 Mandatory Foot Protection	Safety footwear for protection against chemical risk, with antistatic and heat resistant properties		EN 13287:2008 EN ISO 20345:2011 EN 13832-1:2006	Replace boots at any sign of deterioration.

**F: Additional emergency measures**

Emergency Measure	Standards	Emergency Measure	Standards
 Emergency Shower	ANSI Z358-1 ISO 3864-1:2002	 Eyewash Stations	DIN 12 899 ISO 3864-1:2002

**Environmental Exposure Controls:**

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

**Volatile organic compounds:**

With regard to Directive 2010/75/EU, this product has the following characteristics:

V.O.C. (Supply):	17.56 % weight
V.O.C. density at 20 °C:	221.7 kg/m <sup>3</sup> (221.7 g/L)
Average carbon number:	6
Average molecular weight:	182.2 g/mol

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**SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES**

		For complete information see the product datasheet.				
9.1	<b>Information on basic physical and chemical properties</b>	<p><b>Appearance:</b> Physical state at 20 °C: Aerosol Appearance: Not available Color: Not available Odor: Not available</p> <p><b>Volatility:</b> Boiling point at atmospheric pressure: 321 °C (Propellant) Vapour pressure at 20 °C: 4 Pa Vapour pressure at 50 °C: 31 Pa (0 kPa) Evaporation rate at 20 °C: Non-applicable *</p> <p><b>Product description:</b> Density at 20 °C: 1262 Kg/m<sup>3</sup> Relative density at 20 °C: 1.262 Dynamic viscosity at 20 °C: Non-applicable * Kinematic viscosity at 20 °C: Non-applicable * Kinematic viscosity at 40 °C: Non-applicable * Concentration: Non-applicable * pH: Non-applicable * Vapour density at 20 °C: Non-applicable * Partition coefficient n-octanol/water 20 °C: Non-applicable * Solubility in water at 20 °C: Non-applicable * Solubility properties: Non-applicable * Decomposition temperature: Non-applicable * Melting point/freezing point: Non-applicable * Recipient pressure: Non-applicable *</p> <p><b>Flammability:</b> *Not relevant due to the nature of the product, not providing information property of its hazards. Flash Point: Non Flammable (&gt;60 °C) Autoignition temperature: 240 °C (Propellant) Lower flammability limit: Non-Applicable* Upper flammability limit: Non-Applicable*</p>				
9.2	<b>Other Information:</b>	Surface tension at 20 °C: Non-Applicable* Refraction index: Non-Applicable* *Not relevant due to the nature of the product, not providing information property of its hazards.				

**SECTION X: STABILITY AND REACTIVITY**

10.1	<b>Reactivity</b>	No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.				
10.2	<b>Chemical stability</b>	Chemically stable under the conditions of storage, handling and use.				
10.3	<b>Possibility of hazardous reactions</b>	Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.				
10.4	<b>Conditions to avoid</b>	Applicable for handling and storage at room temperature:				
		Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
		Not applicable	Not applicable	Risk of Combustion	Avoid Direct Impact	Not applicable

## DENNARD PU EXPANSIBLE FIRE RATED STRAW FOAM-755ML

10.5	<b>Incompatible materials</b>	Acids	Water	Combustive Materials	Combustible materials	Others
		Not Applicable	Not Applicable	Avoid direct impact	Not Applicable	Avoid alkalis or strong bases
10.6	<b>Hazardous decomposition products</b>	See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO <sub>2</sub> ), carbon monoxide and other organic compounds.				

## DENNARD PU EXPANSIBLE FIRE RATED STRAW FOAM-755ML

### SECTION XI: TOXICOLOGICAL INFORMATION

<p>11.1</p>	<p><b>Information on toxicological effects</b></p>	<p>The experimental information related to the toxicological properties of the product itself is not available. Contains glycols. With possibility of effects that are hazardous to the health, it is recommended not to breathe the vapours for long periods of time.</p> <p><b>Dangerous health implications:</b> In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:</p> <p><b>A: Ingestion:</b></p> <ul style="list-style-type: none"> <li>- Acute toxicity: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.</li> <li>- Corrosivity/Irritability: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.</li> </ul> <p><b>B: Inhalation:</b></p> <ul style="list-style-type: none"> <li>- Acute toxicity: Exposure in high concentration can cause a breakdown in the central nervous system causing headache, dizziness, vertigo, nausea, vomiting, confusion, and in serious cases, loss of consciousness.</li> <li>- Corrosivity/Irritability: Causes irritation in respiratory passages, which is normally reversible and limited to the upper respiratory passages.</li> </ul> <p><b>C: Contact with the skin and the eyes:</b></p> <ul style="list-style-type: none"> <li>- Contact with the skin: Produces skin inflammation.</li> <li>- Contact with the eyes: Produces eye damage after contact.</li> </ul> <p><b>D: CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):</b></p> <ul style="list-style-type: none"> <li>- Carcinogenicity: Exposure to this product can cause cancer. For more specific information on the possible health effects see section 2.</li> <li>- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.</li> <li>- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.</li> </ul> <p><b>E: Sensitizing effects:</b></p> <ul style="list-style-type: none"> <li>- Respiratory: Prolonged exposure can result in specific respiratory hypersensitivity.</li> <li>- Cutaneous: Prolonged contact with the skin can result in episodes of allergic contact dermatitis.</li> </ul> <p><b>F: Specific target organ toxicity (STOT)-time exposure:</b> Causes irritation in respiratory passages, which is normally reversible and limited to the upper respiratory passages.</p> <p><b>G: Specific target organ toxicity (STOT)-repeated exposure:</b></p> <ul style="list-style-type: none"> <li>- Specific target organ toxicity (STOT) -repeated exposure: Exposure in high concentration can cause a breakdown in the central nervous system causing headache, dizziness, vertigo, nausea, vomiting, confusion, and in serious cases, loss of consciousness.</li> <li>- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.</li> </ul>
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**DENNARD PU EXPANSIBLE FIRE RATED STRAW FOAM-755ML**

**H: Aspiration hazard:**

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

**Other information:**

Non-applicable

**Specific toxicology information on the substances:**

Identification	Acute toxicity		Genus
	LD50 oral	LD50 dermal	
Tris(1-chloro-2-propyl) Phosphate CAS: 13674-84-5 EC: 237-158-7	632 mg/kg	2000 mg/kg	Rat
		11 mg/L (4 h)	Rat
Polymer with 2-Butyne-1,4-Diol and (Chloromethyl-)Oxirane, Brominated, Dehydrochlorinated, Methoxylated CAS: 86675-46-9 EC: Non-applicable	917 mg/kg	Non-applicable	Rat
	500 mg/kg (ATEi)	Non-applicable	
Triethyl phosphate CAS: 78-40-0 EC: 201-114-5	Non-applicable	Non-applicable	
	Non-applicable	Non-applicable	
4,4'-methylenediphenyl diisocyanate, isomers and homologues CAS: 9016-87-9 EC: Non-applicable	Non-applicable	11 mg/L (4 h) (ATEi)	
	Non-applicable	Non-applicable	
Dimethyl ether CAS: 115-10-6 EC: 204-065-8	Non-applicable	308.5 mg/L (4 h)	Rat
	Non-applicable	Non-applicable	
Butane CAS: 106-97-8 EC: 203-448-7	Non-applicable	658 mg/L (4 h)	Rat
	Non-applicable	Non-applicable	

**SECTION XII: ECOLOGICAL INFORMATION**

The experimental information related to the eco-toxicological properties of the product itself is not available  
Contains phosphates. Excessive discharge may cause eutrophication.

12.1	<b>Toxicity</b>	Not Available																																										
12.2	<b>Persistence and degradability</b>	<table border="1"> <thead> <tr> <th>Identification</th> <th colspan="2">Degradability</th> <th colspan="2">Biodegradability</th> </tr> </thead> <tbody> <tr> <td>Tris(1-chloro-2-propyl) Phosphate CAS: 13674-84-5 EC: 237-158-7</td> <td>BOD5</td> <td>Non-applicable</td> <td>Concentration</td> <td>100 mg/L</td> </tr> <tr> <td></td> <td>COD</td> <td>Non-applicable</td> <td>Period</td> <td>28 days</td> </tr> <tr> <td></td> <td>BOD5/COD</td> <td>Non-applicable</td> <td>% Biodegradable</td> <td>0%</td> </tr> </tbody> </table>	Identification	Degradability		Biodegradability		Tris(1-chloro-2-propyl) Phosphate CAS: 13674-84-5 EC: 237-158-7	BOD5	Non-applicable	Concentration	100 mg/L		COD	Non-applicable	Period	28 days		BOD5/COD	Non-applicable	% Biodegradable	0%																						
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12.3	<b>Bio accumulative potential</b>	<table border="1"> <thead> <tr> <th>Identification</th> <th colspan="2">Bioaccumulation potential</th> </tr> </thead> <tbody> <tr> <td>Tris(1-chloro-2-propyl) Phosphate CAS: 13674-84-5 EC: 237-158-7</td> <td>BCF</td> <td>5</td> </tr> <tr> <td></td> <td>Pow Log</td> <td>2.59</td> </tr> <tr> <td></td> <td>Potential</td> <td>Low</td> </tr> <tr> <td>Isobutane CAS: 75-28-5 EC: 200-857-2</td> <td>BCF</td> <td>27</td> </tr> <tr> <td></td> <td>Pow Log</td> <td>2.76</td> </tr> <tr> <td></td> <td>Potential</td> <td>Low</td> </tr> <tr> <td>Propane CAS: 74-98-6 EC: 200-827-9</td> <td>BCF</td> <td>13</td> </tr> <tr> <td></td> <td>Pow Log</td> <td>2.86</td> </tr> <tr> <td></td> <td>Potential</td> <td>Low</td> </tr> <tr> <td>Butane CAS: 106-97-8 EC: 203-448-7</td> <td>BCF</td> <td>33</td> </tr> <tr> <td></td> <td>Pow Log</td> <td>2.89</td> </tr> <tr> <td></td> <td>Potential</td> <td>Moderate</td> </tr> </tbody> </table>	Identification	Bioaccumulation potential		Tris(1-chloro-2-propyl) Phosphate CAS: 13674-84-5 EC: 237-158-7	BCF	5		Pow Log	2.59		Potential	Low	Isobutane CAS: 75-28-5 EC: 200-857-2	BCF	27		Pow Log	2.76		Potential	Low	Propane CAS: 74-98-6 EC: 200-827-9	BCF	13		Pow Log	2.86		Potential	Low	Butane CAS: 106-97-8 EC: 203-448-7	BCF	33		Pow Log	2.89		Potential	Moderate			
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12.4	<b>Mobility in Soil</b>	<table border="1"> <thead> <tr> <th>Identification</th> <th colspan="2">Absorption/desorption</th> <th colspan="2">Volatility</th> </tr> </thead> <tbody> <tr> <td>Isobutane CAS: 75-28-5 EC: 200-857-2</td> <td>Koc</td> <td>35</td> <td>Henry</td> <td>1.206E+5 Pa·m<sup>3</sup>/mol</td> </tr> <tr> <td></td> <td>Conclusion</td> <td>Very High</td> <td>Dry soil</td> <td>Yes</td> </tr> <tr> <td></td> <td>Surface tension</td> <td>9.84E-3 N/m (25 °C)</td> <td>Moist soil</td> <td>Yes</td> </tr> <tr> <td>Dimethyl ether CAS: 115-10-6 EC: 204-065-8</td> <td>Koc</td> <td>Non-applicable</td> <td>Henry</td> <td>Non-applicable</td> </tr> <tr> <td></td> <td>Conclusion</td> <td>Non-applicable</td> <td>Dry soil</td> <td>Non-applicable</td> </tr> <tr> <td></td> <td>Surface tension</td> <td>1.136E-2 N/m (25 °C)</td> <td>Moist soil</td> <td>Non-applicable</td> </tr> </tbody> </table>	Identification	Absorption/desorption		Volatility		Isobutane CAS: 75-28-5 EC: 200-857-2	Koc	35	Henry	1.206E+5 Pa·m <sup>3</sup> /mol		Conclusion	Very High	Dry soil	Yes		Surface tension	9.84E-3 N/m (25 °C)	Moist soil	Yes	Dimethyl ether CAS: 115-10-6 EC: 204-065-8	Koc	Non-applicable	Henry	Non-applicable		Conclusion	Non-applicable	Dry soil	Non-applicable		Surface tension	1.136E-2 N/m (25 °C)	Moist soil	Non-applicable							
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		Triethyl phosphate CAS: 78-40-0 EC: 201-114-5	Koc	Non-applicable	Henry	Non-applicable
			Conclusion	Non-applicable	Dry soil	Non-applicable
			Surface tension	2.961E-2 N/m (25 °C)	Moist soil	Non-applicable
		Propane CAS: 74-98-6 EC: 200-827-9	Koc	460	Henry	7.164E+4 Pa·m <sup>3</sup> /mol
			Conclusion	Moderate	Dry soil	Yes
			Surface tension	7.02E-3 N/m (25 °C)	Moist soil	Yes
		Butane CAS: 106-97-8 EC: 203-448-7	Koc	900	Henry	9.626E+4 Pa·m <sup>3</sup> /mol
			Conclusion	Low	Dry soil	Yes
			Surface tension	1.187E-2 N/m (25 °C)	Moist soil	Yes
12.5	<b>Results of PBT and vPvB assessment</b>	Non-Applicable				
12.6	<b>Other adverse effects</b>	Not Described				

**SECTION XIII: DISPOSAL CONSIDERATIONS**

Code	Description	Waste Class (Regulation (EU) No. 1357/2014)
16 05 04*	Gases in pressure containers (including halons) containing dangerous substances	Dangerous

**Type of Waste (Regulation (EU) No 1357/2014):**  
HP3 Flammable, HP4 Irritant — skin irritation and eye damage, HP5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity, HP6 Acute Toxicity, HP13 Sensitizing, HP7 Carcinogenic

**Waste management (disposal and evaluation):**  
Consult the authorized waste service manager on the assessment and disposal operations in accordance with Annex 1 and Annex 2 (Directive 2008/98/EC). As under 15 01 (2014/955/EC) of the code and in case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See paragraph 6.2.

**Regulations related to waste management:**  
In accordance with Annex II of Regulation (EC) n°1907/2006 (REACH) the community or state provisions related to waste management are stated  
Community legislation: Directive 2008/98/EC, 2014/955/EU, Regulation (EU) No 1357/2014

**SECTION XIV: TRANSPORT INFORMATION**

**Transport of dangerous goods by land:**  
With regard to ADR 2015 and RID 2015:

14.1	<b>UN Number</b>	Non-Applicable
14.2	<b>UN proper shipping name</b>	Non-Applicable
14.3	<b>Transport hazard class(es)</b>	Non-Applicable Labels: Non-Applicable
14.4	<b>Packing group</b>	Non-Applicable
14.5	<b>Dangerous for the environment</b>	No
14.6	<b>Special precautions for user</b>	Special regulations: Non-Applicable Tunnel restriction code: Non-Applicable Physico-Chemical properties: see section 9 Limited quantities: Non-Applicable
14.7	<b>Transport in bulk according to Annex II of Marpol and the IBC Code</b>	Non-Applicable

Transport of dangerous goods by sea: With regard to IMDG 37-14:		
14.1	UN Number	Non-Applicable
14.2	UN proper shipping name	Non-Applicable
14.3	Transport hazard class(es)	Non-Applicable
		Labels: Non-Applicable
14.4	Packing group	Non-Applicable
14.5	Dangerous for the environment	No
14.6	Special precautions for user	Special regulations: Non-Applicable
		EmS Codes: see section 9
		Physico-Chemical properties: see section 9
14.7	Transport in bulk according to Annex II of Marpol and the IBC Code	Non-Applicable
Transport of dangerous goods by air: With regard to IATA/ICAO 2015:		
14.1	UN Number	Non-Applicable
14.2	UN proper shipping name	Non-Applicable
14.3	Transport hazard class(es)	Non-Applicable
		Labels: Non-Applicable
14.4	Packing group	Non-Applicable
14.5	Dangerous for the environment	No
14.6	Special precautions for user	Physico-Chemical properties: see section 9
14.7	Transport in bulk according to Annex II of Marpol and the IBC Code	Non-Applicable

### SECTION XV: REGULATORY INFORMATION

15.1	<b>Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	Candidate substances for authorization under the Regulation (EC) 1907/2006 (REACH): Non-applicable Substances included in Annex XIV of REACH ("Authorization List") and sunset date: Non-applicable Regulation (EC) 1005/2009, about substances that deplete the ozone layer: Non-applicable Article 95, REGULATION (EU) No 528/2012: Non-applicable REGULATION (EU) No 649/2012, in relation to the import and export of hazardous chemical products: Non-applicable
	<b>Limitations to commercialization and the use of certain dangerous substances and mixtures (Annex XVII, REACH):</b>	Contains more than 0.1 % of 4,4'-methylenediphenyl diisocyanate, isomers and homologues by weight. This product may not be distributed in its present form for first-time sale to the general public after 27th December 2010 unless the packaging contains protective gloves meeting the provisions of European Council Directive 89/686/CEE.
	<b>Specific provisions in terms of protecting people or the environment</b>	It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

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	<b>Other legislation</b>	<p>The product could be affected by sectorial legislation</p> <p>Council Directive 75/324/EEC of 20 May 1975 on the approximation of the laws of the Member States relating to aerosol dispensers</p> <p>Commission Directive 94/1/EC of 6 January 1994 adapting some technicalities of Council Directive 75/324/EEC on the approximation of the laws of the relating Member States to aerosol dispensers</p> <p>Commission Directive 2008/47/EC of 8 April 2008 amending, for the purposes of adapting to technical progress, Council Directive 75/324/EEC on the approximation of the laws of the Member States relating to aerosol dispensers</p> <p>Commission Directive 2013/10/EU of 19 March 2013 amending Council Directive 75/324/EEC on the approximation of the laws of the Member States relating to aerosol dispensers in order to adapt its labelling provisions to Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures</p>
15.2	<b>Chemical safety assessment</b>	The supplier has not carried out evaluation of chemical safety.

#### SECTION XVI: OTHER INFORMATION

**Legislation related to safety data sheets:**

This safety data sheet has been designed in accordance with ANNEX II-Guide to the compilation of safety data sheets of Regulation (EC) N° 1907/2006 (Regulation (EU) N° 453/2010, Regulation (EC) N° 2015/830)

**Modifications related to the previous security card which concerns the ways of managing risks. : COMPOSITION/INFORMATION ON INGREDIENTS:**

Added Content

Tris(1-chloro-2-propyl) Phosphate (13674-84-5)

Polymer with 2-Butyne-1,4-Diol and (Chloromethyl-)Oxirane, Brominated, Dehydrochlorinated, Methoxylated (86675-46-9)

Removed Content

Halogenated polyetherpolyol (86675-46-9)

Phosphoric trichloride, reaction products with propylene oxide

**Texts of the legislative phrases mentioned in section 2:**

H319: Causes serious eye irritation

H315: Causes skin irritation

H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled

H317: May cause an allergic skin reaction

H351: Suspected of causing cancer

H335: May cause respiratory irritation

H373: May cause damage to organs through prolonged or repeated exposure

H302+H332: Harmful if swallowed or if inhaled

H229: Pressurised container: May burst if heated

H222: Extremely flammable aerosol

**Texts of the legislative phrases mentioned in section 3:**

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

**CLP Regulation (EC) n° 1272/2008:**

Acute Tox. 4: H302 - Harmful if swallowed

Acute Tox. 4: H332 - Harmful if inhaled

Carc. 2: H351 - Suspected of causing cancer

Eye Irrit. 2: H319 - Causes serious eye irritation

Flam. Gas 1: H220 - Extremely flammable gas

Press. Gas: H280 - Contains gas under pressure, may explode if heated

Resp. Sens. 1: H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled Skin

Irrit. 2: H315 - Causes skin irritation

Skin Sens. 1: H317 - May cause an allergic skin reaction

STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure STOT

SE 3: H335 - May cause respiratory irritation

**Classification procedure:**

Eye Irrit. 2: Calculation method  
Skin Irrit. 2: Calculation method  
Resp. Sens. 1: Calculation method  
Skin Sens. 1: Calculation method  
Carc. 2: Calculation method  
STOT SE 3: Calculation method  
STOT RE 2: Calculation method  
Acute Tox. 4: Calculation method  
Aerosol 1: Calculation method  
Aerosol 1: Calculation method

**Advice related to training:**

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

**Principal bibliographical sources:**

<http://esis.jrc.ec.europa.eu>  
<http://echa.europa.eu>  
<http://eur-lex.europa.eu>

**Abbreviations and acronyms:**

ADR: European agreement concerning the international carriage of dangerous goods by road  
IMDG: International maritime dangerous goods code  
IATA: International Air Transport Association  
ICAO: International Civil Aviation Organisation  
COD: Chemical Oxygen Demand  
BOD5: 5-day biochemical oxygen demand  
BCF: Bioconcentration factor  
LD50: Lethal Dose 50  
CL50: Lethal Concentration 50  
EC50: Effective concentration 50  
Log-POW: Octanol-water partition coefficient  
Koc: Partition coefficient of organic carbon

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation at European and state level, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product, it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within our awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.