

**according to WHS Regulations**

Printing date 24.02.2020

Revision: 24.02.2020

Hazardous according to criteria of Australian Safety and Compensation Council.

## 1 Identification

- **Product identifier**
- **Trade name:** ASTM D5623 MULTI-COMPONENT STD
- **Article number:** N9308796
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**

PerkinElmer, Inc.  
710 Bridgeport Avenue  
Shelton, Connecticut 06484 USA  
CustomerCareUS@perkinelmer.com  
203-925-4600

-----  
Supplier/Local:

-----  
PerkinElmer Australia  
Lvl 2, Bldg 5, Brandon Office Park  
530-540 Springvale Road  
Glen Waverley  
Melbourne  
VIC 3150  
Australia  
1-800-033-391  
ausales@perkinelmer.com

- **Emergency telephone number:**  
CHEMTREC (within US) 800-424-9300  
CHEMTREC (from outside US) +1 703-527-3887 (call collect)  
CHEMTREC (within AU) +(61)-290372994

## 2 Hazard(s) Identification

- **Classification of the substance or mixture**



flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



health hazard

Repr. 2 H361 Suspected of damaging fertility or the unborn child.  
STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.  
Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

(Contd. on page 2)

AU

**according to WHS Regulations**

Printing date 24.02.2020

Revision: 24.02.2020

**Trade name: ASTM D5623 MULTI-COMPONENT STD**

(Contd. of page 1)



*Skin Irrit. 2 H315 Causes skin irritation.*

*STOT SE 3 H336 May cause drowsiness or dizziness.*

· **Label elements**

· **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms** GHS02, GHS07, GHS08

· **Signal word** Danger

· **Hazard-determining components of labelling:**

*n-hexane*

*2,2,4-trimethylpentane*

*toluene*

· **Hazard statements**

*H225 Highly flammable liquid and vapour.*

*H315 Causes skin irritation.*

*H361 Suspected of damaging fertility or the unborn child.*

*H336 May cause drowsiness or dizziness.*

*H373 May cause damage to organs through prolonged or repeated exposure.*

*H304 May be fatal if swallowed and enters airways.*

· **Precautionary statements**

*P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.*

*P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.*

*P321 Specific treatment (see on this label).*

*P331 Do NOT induce vomiting.*

*P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*P403+P233 Store in a well-ventilated place. Keep container tightly closed.*

*P501 Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Other hazards**

*The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.*

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition and Information on Ingredients

· **Chemical characterisation: Mixtures**

· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**

110-54-3	<i>n-hexane</i>	30-50%
	<i>Flam. Liq. 2, H225</i>	
	<i>Repr. 2, H361; STOT RE 2, H373; Asp. Tox. 1, H304</i>	
	<i>Skin Irrit. 2, H315; STOT SE 3, H336</i>	

(Contd. on page 3)

according to WHS Regulations

Printing date 24.02.2020

Revision: 24.02.2020

Trade name: ASTM D5623 MULTI-COMPONENT STD

		(Contd. of page 2)
540-84-1	2,2,4-trimethylpentane <div> <div>Flam. Liq. 2, H225</div> <div>Asp. Tox. 1, H304</div> <div>Skin Irrit. 2, H315; STOT SE 3, H336</div> </div>	30-50%
108-88-3	toluene <div> <div>Flam. Liq. 2, H225</div> <div>Repr. 2, H361; STOT RE 2, H373; Asp. Tox. 1, H304</div> <div>Skin Irrit. 2, H315; STOT SE 3, H336</div> </div>	≥20-≤25%
<b>Additional Components</b>		
75-15-0	carbon disulphide <div> <div>Flam. Liq. 2, H225</div> <div>Repr. 2, H361; STOT RE 1, H372</div> <div>Skin Irrit. 2, H315; Eye Irrit. 2, H319</div> </div>	0.005%
75-18-3	Dimethyl sulfide <div> <div>Flam. Liq. 2, H225</div> <div>Skin Irrit. 2, H315; Eye Irrit. 2A, H319</div> </div>	0.005%
95-15-8	benzo[b]thiophene	0.005%
107-03-9	Propanethiol <div> <div>Flam. Liq. 2, H225</div> <div>Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319</div> </div>	0.005%
107-47-1	di-tert-butyl sulphide <div> <div>Flam. Liq. 3, H226</div> </div>	0.005%
110-66-7	pentane-1-thiol <div> <div>Flam. Liq. 2, H225</div> </div>	0.005%
111-31-9	1-hexanethiol <div> <div>Flam. Liq. 3, H226</div> <div>Acute Tox. 4, H302</div> </div>	0.005%
111-47-7	dipropyl sulphide <div> <div>Flam. Liq. 3, H226</div> <div>Eye Irrit. 2A, H319</div> </div>	0.005%
143-10-2	decane-1-thiol <div> <div>Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335</div> </div>	0.005%
513-44-0	2-methylpropane-1-thiol <div> <div>Flam. Liq. 2, H225</div> <div>Acute Tox. 4, H332</div> </div>	0.005%
540-63-6	ethane-1,2-dithiol <div> <div>Flam. Liq. 3, H226</div> <div>Acute Tox. 4, H302</div> </div>	0.005%
554-14-3	2-methylthiophene <div> <div>Flam. Liq. 2, H225</div> </div>	0.005%
616-44-4	3-methylthiophene <div> <div>Flam. Liq. 2, H225</div> <div>Acute Tox. 3, H301</div> </div>	0.005%

(Contd. on page 4)

according to WHS Regulations

Printing date 24.02.2020

Revision: 24.02.2020

**Trade name: ASTM D5623 MULTI-COMPONENT STD**

(Contd. of page 3)		
624-89-5	Methyl ethyl sulfide Flam. Liq. 2, H225	0.005%
629-19-6	dipropyl disulphide Flam. Liq. 4, H227	0.005%
872-55-9	2-Ethylthiophene Flam. Liq. 3, H226	0.005%
928-98-3	pentane-1,5-dithiol Acute Tox. 3, H331 Acute Tox. 4, H302; Acute Tox. 4, H312	0.005%
1191-08-8	butane-1,4-dithiol Acute Tox. 3, H331 Acute Tox. 4, H302 Flam. Liq. 4, H227	0.005%
1455-21-6	n-Nonylmercaptan	0.005%
1639-09-4	heptane-1-thiol Flam. Liq. 3, H226	0.005%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

#### 4 First Aid Measures

· **Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:** Rinse opened eye for several minutes under running water.

· **After swallowing:** If symptoms persist consult doctor.

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

#### 5 Fire Fighting Measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **For safety reasons unsuitable extinguishing agents:** Water with full jet

· **Special hazards arising from the substance or mixture**

During heating or in case of fire poisonous gases are produced.

· **Advice for firefighters**

· **Protective equipment:** Mouth respiratory protective device.

according to WHS Regulations

Printing date 24.02.2020

Revision: 24.02.2020

Trade name: ASTM D5623 MULTI-COMPONENT STD

(Contd. of page 4)

## 6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures**  
Mount respiratory protective device.  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Prevent seepage into sewage system, workpits and cellars.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## 7 Handling and Storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.  
Prevent formation of aerosols.
- **Information about fire - and explosion protection:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.  
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls and personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

**110-54-3 n-hexane**

WES Long-term value: 72 mg/m<sup>3</sup>, 20 ppm

**108-88-3 toluene**

WES Short-term value: 574 mg/m<sup>3</sup>, 150 ppm

Long-term value: 191 mg/m<sup>3</sup>, 50 ppm

Sk

(Contd. on page 6)

**according to WHS Regulations**

Printing date 24.02.2020

Revision: 24.02.2020

**Trade name: ASTM D5623 MULTI-COMPONENT STD**

(Contd. of page 5)

· **Additional information:** The lists valid during the making were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

## 9 Physical and Chemical Properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Liquid

Colour: Dark brown

· **Odour:** Characteristic

· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/freezing point: Undetermined.

(Contd. on page 7)

**according to WHS Regulations**

Printing date 24.02.2020

Revision: 24.02.2020

**Trade name: ASTM D5623 MULTI-COMPONENT STD**

(Contd. of page 6)

<b>Initial boiling point and boiling range:</b> 69 °C	
· <b>Flash point:</b>	-26 °C
· <b>Flammability (solid, gas):</b>	Not applicable.
· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto-ignition temperature:</b>	Product is not selfigniting.
· <b>Explosive properties:</b>	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· <b>Explosion limits:</b>	
Lower:	1.1 Vol %
Upper:	7.4 Vol %
· <b>Vapour pressure at 20 °C:</b>	29 hPa
· <b>Density at 20 °C:</b>	0.39405-1.27454 g/cm <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with water:</b>	Not miscible or difficult to mix.
· <b>Partition coefficient: n-octanol/water:</b>	Not determined.
· <b>Viscosity:</b>	
Dynamic:	Not determined.
Kinematic:	Not determined.
· <b>Solvent content:</b>	
Organic solvents:	70-125 %
Solids content:	0.0 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and Reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

(Contd. on page 8)

according to WHS Regulations

Printing date 24.02.2020

Revision: 24.02.2020

Trade name: ASTM D5623 MULTI-COMPONENT STD

(Contd. of page 7)

## 11 Toxicological Information

- **Information on toxicological effects**
- **Acute toxicity**

- **LD/LC50 values relevant for classification:**

### 108-88-3 toluene

Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	12,124 mg/kg (rabbit)
Inhalative	LC50/4 h	5,320 mg/l (mouse)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** No irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
Irritant
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**  
Repr. 2

## 12 Ecological Information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Do not allow product to reach ground water, water course or sewage system.  
Danger to drinking water if even small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

(Contd. on page 9)

AU

**according to WHS Regulations**

Printing date 24.02.2020






Revision: 24.02.2020

**Trade name: ASTM D5623 MULTI-COMPONENT STD**

(Contd. of page 8)

- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

· <b>UN-Number</b>	UN1993
· <b>ADG, IMDG, IATA</b>	
· <b>UN proper shipping name</b>	1993 FLAMMABLE LIQUID, N.O.S., special provision 640D (HEXANES, OCTANES), ENVIRONMENTALLY HAZARDOUS
· <b>ADG</b>	
· <b>IMDG</b>	FLAMMABLE LIQUID, N.O.S. (HEXANES, OCTANES), MARINE POLLUTANT
· <b>IATA</b>	FLAMMABLE LIQUID, N.O.S. (HEXANES, OCTANES)
· <b>Transport hazard class(es)</b>	
· <b>ADG</b>	
	 
· <b>Class</b>	3 (F1) Flammable liquids.
· <b>Label</b>	3
· <b>IMDG</b>	
	 
· <b>Class</b>	3 Flammable liquids.
· <b>Label</b>	3
· <b>IATA</b>	
	
· <b>Class</b>	3 Flammable liquids.
· <b>Label</b>	3
· <b>Packing group</b>	
· <b>ADG, IMDG, IATA</b>	II
· <b>Environmental hazards:</b>	Product contains environmentally hazardous substances:
· <b>Marine pollutant:</b>	2,2,4-trimethylpentane
· <b>Special marking (ADG):</b>	Symbol (fish and tree)

(Contd. on page 10)

**according to WHS Regulations**

Printing date 24.02.2020

Revision: 24.02.2020










**Trade name: ASTM D5623 MULTI-COMPONENT STD**

(Contd. of page 9)

· <b>Special precautions for user</b>	Warning: Flammable liquids.
· <b>Danger code (Kemler):</b>	33
· <b>EMS Number:</b>	F-E, S-E
· <b>Stowage Category</b>	B
· <b>Transport in bulk according to Annex II of Marpol and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADG</b>	1L
· <b>Limited quantities (LQ)</b>	Code: E2
· <b>Excepted quantities (EQ)</b>	Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· <b>Transport category</b>	2
· <b>Tunnel restriction code</b>	D/E
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	1L
· <b>Excepted quantities (EQ)</b>	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· <b>UN "Model Regulation":</b>	UN 1993 FLAMMABLE LIQUID, N.O.S., SPECIAL PROVISION 640D (HEXANES, OCTANES), 3, II, ENVIRONMENTALLY HAZARDOUS

**15 Regulatory information**

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

110-54-3	n-hexane	30-50%
	 Flam. Liq. 2, H225  Repr. 2, H361; STOT RE 2, H373; Asp. Tox. 1, H304  Skin Irrit. 2, H315; STOT SE 3, H336	
540-84-1	2,2,4-trimethylpentane	30-50%
	 Flam. Liq. 2, H225  Asp. Tox. 1, H304  Skin Irrit. 2, H315; STOT SE 3, H336	
108-88-3	toluene	≥20-≤25%
	 Flam. Liq. 2, H225  Repr. 2, H361; STOT RE 2, H373; Asp. Tox. 1, H304  Skin Irrit. 2, H315; STOT SE 3, H336	

· **Australia: Priority Existing Chemicals**

None of the ingredients is listed.

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

(Contd. on page 11)

**according to WHS Regulations**

Printing date 24.02.2020

Revision: 24.02.2020

**Trade name: ASTM D5623 MULTI-COMPONENT STD**

(Contd. of page 10)

- **Seveso category**  
E1 Hazardous to the Aquatic Environment  
P5c FLAMMABLE LIQUIDS
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **National regulations:**
- **Waterhazard class:** Water hazard class 2 (Self-assessment): hazardous for water.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

### Disclaimer

The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer Life and Analytical Sciences shall not be held liable for any damage resulting from handling or from contact with the product.

### · Relevant phrases

- H225 Highly flammable liquid and vapour.
- H226 Flammable liquid and vapour.
- H227 Combustible liquid.
- H301 Toxic if swallowed.
- H302 Harmful if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H312 Harmful in contact with skin.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H331 Toxic if inhaled.
- H332 Harmful if inhaled.
- H335 May cause respiratory irritation.
- H336 May cause drowsiness or dizziness.
- H361 Suspected of damaging fertility or the unborn child.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H373 May cause damage to organs through prolonged or repeated exposure.

### · Department issuing SDS: Environmental, Health and Safety

### · Contact:

- Within the USA: 1-(800)-762-4000
- Outside the USA: 1-(203)-712-8488

### · Abbreviations and acronyms

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent

(Contd. on page 12)

**according to WHS Regulations**

Printing date 24.02.2020

Revision: 24.02.2020

**Trade name: ASTM D5623 MULTI-COMPONENT STD**

(Contd. of page 11)

PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
Flam. Liq. 2: Flammable liquids – Category 2  
Skin Irrit. 2: Skin corrosion/irritation – Category 2  
Repr. 2: Reproductive toxicity – Category 2  
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3  
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2  
Asp. Tox. 1: Aspiration hazard – Category 1

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