



Safety Data Sheet

According to Annex II to REACH - Regulation 2020/878 and to Annex II to UK REACH

SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Code: **3575000099**
Product name **MS 2 PART PRIMER comp. B**

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use **Polyurethane coating**

1.3. Details of the supplier of the safety data sheet

Name **Liquid Roofing Systems LTD**
Full address **Roofing House,Prees Green, Whitchurch,Shropshire,SY13 2BN**
District and Country

Tel. **01948841877**

e-mail address of the competent person responsible for the Safety Data Sheet **technical@lrs-systems.co.uk**

1.4. Emergency telephone number

For urgent inquiries refer to

United Kingdom
999/112 emergency
111 non-emergency medical number
NHS 111 (England)
NHS 24 (Scotland)
NHS Direct (Wales)

Ireland
National Poisons Information Centre, Beaumont Hospital, PO Box 1297, Beaumont Road, Dublin 9
018092166
018092566

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2020/878.

Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Flammable liquid, category 2	H225	Highly flammable liquid and vapour.
Reproductive toxicity, category 2	H361d	Suspected of damaging the unborn child.
Aspiration hazard, category 1	H304	May be fatal if swallowed and enters airways.
Specific target organ toxicity - repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.
Skin corrosion, category 1C	H314	Causes severe skin burns and eye damage.
Serious eye damage, category 1	H318	Causes serious eye damage.
Skin sensitization, category 1	H317	May cause an allergic skin reaction.
Specific target organ toxicity - single exposure, category 3	H336	May cause drowsiness or dizziness.
Hazardous to the aquatic environment, chronic toxicity, category 2	H411	Toxic to aquatic life with long lasting effects.



LIQUID ROOFING SYSTEMS

3575000099 - MS 2 PART PRIMER comp. B

Revision nr.13
Dated 06/06/2022
Printed on 27/09/2022
Page n. 2 / 18
Replaced revision:12 (Dated 10/09/2020)

EN

SECTION 2. Hazards identification ... / >>

2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:



Signal words: Danger

Hazard statements:

H225	Highly flammable liquid and vapour.
H361d	Suspected of damaging the unborn child.
H304	May be fatal if swallowed and enters airways.
H373	May cause damage to organs through prolonged or repeated exposure.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements:

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe dust / fume / gas / mist / vapours / spray.
P331	Do NOT induce vomiting.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P280	Wear protective gloves/ protective clothing / eye protection / face protection.

Contains:

TOLUENE
FATTY ACIDS, C18-UNSATURATED, DIMERS, OLIGOMERIC REACTION PRODUCTS WITH TALL-OIL FATTY ACIDS AND TRIETHYLENETETRAMINE
2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL
OILS, PINE
3-AMINOPROPYLTRIETHOXYSILANE
ISOPROPANOL
AMINES, POLYETHYLENEPOLY-, TRIETHYLENETETRAMINE FRACTION

2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage \geq than 0,1%.

The product does not contain substances with endocrine disrupting properties in concentration \geq 0.1%.

SECTION 3. Composition/information on ingredients

3.1. Substances

Information not relevant



LIQUID ROOFING SYSTEMS

3575000099 - MS 2 PART PRIMER comp. B

Revision nr.13
Dated 06/06/2022
Printed on 27/09/2022
Page n. 3 / 18
Replaced revision:12 (Dated 10/09/2020)

EN

SECTION 3. Composition/information on ingredients ... / >>

3.2. Mixtures

Contains:

Identification x = Conc. % Classification (EC) 1272/2008 (CLP)

FATTY ACIDS, C18-UNSATURATED, DIMERS, OLIGOMERIC REACTION PRODUCTS WITH TALL-OIL FATTY ACIDS AND TRIETHYLENETETRAMINE

CAS 68082-29-1 45 ≤ x < 47,5 Eye Dam. 1 H318, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Chronic 2 H411

EC 500-191-5

INDEX

REACH Reg. 01-2119972320-44

ISOPROPANOL

CAS 67-63-0 21 ≤ x < 22,5 Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336

EC 200-661-7

INDEX 603-117-00-0

REACH Reg. 01-2119457558-25

TOLUENE

CAS 108-88-3 15 ≤ x < 16,5 Flam. Liq. 2 H225, Repr. 2 H361d, Asp. Tox. 1 H304, STOT RE 2 H373, Skin Irrit. 2 H315, STOT SE 3 H336, Aquatic Chronic 3 H412

EC 203-625-9

INDEX 601-021-00-3

REACH Reg. 01-2119471310-51

ETHANOL

CAS 64-17-5 4 ≤ x < 4,5 Flam. Liq. 2 H225, Eye Irrit. 2 H319

EC 200-578-6

INDEX 603-002-00-5

REACH Reg. 01-2119457610-43

OILS, PINE

CAS 8002-09-3 4 ≤ x < 4,5 Flam. Liq. 3 H226, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1

EC

INDEX

2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL

CAS 90-72-2 3,5 ≤ x < 4 Acute Tox. 4 H302, Skin Corr. 1C H314, Eye Dam. 1 H318

EC 202-013-9

INDEX 603-069-00-0

REACH Reg. 01-2119560597-27

ETHYL ACETATE

CAS 141-78-6 1,5 ≤ x < 2 Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336, EUH066

EC 205-500-4

INDEX 607-022-00-5

REACH Reg. 01-2119475103-46

3-AMINOPROPYLTRIETHOXYSILANE

CAS 919-30-2 1 ≤ x < 1,5 Acute Tox. 4 H302, Skin Corr. 1B H314, Eye Dam. 1 H318, Skin Sens. 1 H317

EC 213-048-4

INDEX 612-108-00-0

REACH Reg. 01-2119480479-24

AMINES, POLYETHYLENEPOLY-, TRIETHYLENETETRAMINE FRACTION

CAS 90640-67-8 0,5 ≤ x < 0,6 Acute Tox. 4 H302, Acute Tox. 4 H312, Skin Corr. 1B H314, Eye Dam. 1 H318, Skin Sens. 1 H317, Aquatic Chronic 3 H412

EC 292-588-2

INDEX

REACH Reg. 01-2119487919-13

The full wording of hazard (H) phrases is given in section 16 of the sheet.

SECTION 4. First aid measures

4.1. Description of first aid measures

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.

INGESTION: Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.

INHALATION: Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.



LIQUID ROOFING SYSTEMS

3575000099 - MS 2 PART PRIMER comp. B

Revision nr.13
Dated 06/06/2022
Printed on 27/09/2022
Page n. 4 / 18
Replaced revision:12 (Dated 10/09/2020)

EN

SECTION 4. First aid measures ... / >>

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

Specific information on symptoms and effects caused by the product are unknown.

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

Information not available

SECTION 5. Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT

Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.

UNSUITABLE EXTINGUISHING EQUIPMENT

Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Excess pressure may form in containers exposed to fire at a risk of explosion. Do not breathe combustion products.

5.3. Advice for firefighters

GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

Send away individuals who are not suitably equipped. Use explosion-proof equipment. Eliminate all sources of ignition (cigarettes, flames, sparks, etc.) from the leakage site.

6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.

Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. When performing transfer operations involving large containers, connect to an earthing system and wear antistatic footwear. Vigorous



LIQUID ROOFING SYSTEMS

3575000099 - MS 2 PART PRIMER comp. B

Revision nr.13
Dated 06/06/2022
Printed on 27/09/2022
Page n. 5 / 18
Replaced revision:12 (Dated 10/09/2020)

EN

SECTION 7. Handling and storage ... / >>

stirring and flow through the tubes and equipment may cause the formation and accumulation of electrostatic charges. In order to avoid the risk of fires and explosions, never use compressed air when handling. Open containers with caution as they may be pressurised. Do not eat, drink or smoke during use. Avoid leakage of the product into the environment.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Store in a cool and well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Regulatory References:

DEU	Deutschland	Technischen Regeln für Gefahrstoffe (TRGS 900) - Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte. MAK- und BAT-Werte-Liste 2020, Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe, Mitteilung 56
ESP	España	Límites de exposición profesional para agentes químicos en España 2021
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
FIN	Suomi	HTP-VÄRDEN 2020. Koncentrationer som befunnits skadliga. SOCIAL - OCH HÄLSOVÄRDSMINISTERIETS PUBLIKATIONER 2020:25
GRC	Ελλάδα	Π.Δ. 26/2020 (ΦΕΚ 50/Α' 6.3.2020) Εναρμόνιση της ελληνικής νομοθεσίας προς τις διατάξεις των οδηγιών 2017/2398/ΕΕ, 2019/130/ΕΕ και 2019/983/ΕΕ «για την τροποποίηση της οδηγίας 2004/37/ΕΚ "σχετικά με την προστασία των εργαζομένων από τους κινδύνους που συνδέονται με την έκθεση σε καρκινογόνους ή μεταλλαξιογόνους παράγοντες κατά την εργασία"»
HRV	Hrvatska	Pravilnik o izmjenama i dopunama Pravilnika o zaštiti radnika od izloženosti opasnimkemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 1/2021)
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
LTU	Lietuva	Jsakymas dėl lietuvos higienos normos hn 23:2011 „cheminių medžiagų profesinio poveikio ribiniai dydžiai. Matavimo ir poveikio vertinimo bendrieji reikalavimai“ patvirtinimo
NLD	Nederland	Arbeidsomstandighedenregeling. Lijst van wettelijke grenswaarden op grond van de artikelen 4.3, eerste lid, en 4.16, eerste lid, van het Arbeidsomstandighedenbesluit
PRT	Portugal	Decreto-Lei n.º 1/2021 de 6 de janeiro, valores-limite de exposição profissional indicativos para os agentes químicos. Decreto-Lei n.º 35/2020 de 13 de julho, proteção dos trabalhadores contra os riscos ligados à exposição durante o trabalho a agentes cancerígenos ou mutagénicos
POL	Polska	Rozporządzenie ministra rozwoju, pracy i technologii z dnia 18 lutego 2021 r. Zmieniające rozporządzenie w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy
ROU	România	Hotărârea nr. 53/2021 pentru modificarea hotărârii guvernului nr. 1.218/2006, precum și pentru modificarea și completarea hotărârii guvernului nr. 1.093/2006
SVK	Slovensko	NARIADENIE VLÁDY Slovenskej republiky z 12. augusta 2020, ktorým sa mení a dopĺňa nariadenie vlády Slovenskej republiky č. 356/2006 Z. z. o ochrane zdravia zamestnancov pred rizikami súvisiacimi s expozíciou karcinogénnym a mutagénnym faktorom pri práci v znení neskorších predpisov
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Fourth Edition 2020)
EU	OEL EU	Directive (EU) 2022/431; Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 98/24/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2021





LIQUID ROOFING SYSTEMS

35750000099 - MS 2 PART PRIMER comp. B

Revision nr.13
 Dated 06/06/2022
 Printed on 27/09/2022
 Page n. 6 / 18
 Replaced revision:12 (Dated 10/09/2020)

EN

SECTION 8. Exposure controls/personal protection ... / >>

ISOPROPANOL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m ³	ppm	mg/m ³	ppm	
AGW	DEU	500	200	1000	400	
MAK	DEU	500	200	1000	400	
VLA	ESP	500	200	1000	400	
VLEP	FRA			980	400	
TLV	GRC	980	400	1225	500	
GVI/KGVI	HRV	999	400	1250	500	
RD	LTU	350	150	600	250	
TGG	NLD	650				
NDS/NDSch	POL	900		1200		SKIN
TLV	ROU	200	81	500	203	
NPEL	SVK	500	200	1000	400	
WEL	GBR	999	400	1250	500	
TLV-ACGIH		492	200	983	400	

Predicted no-effect concentration - PNEC

Normal value in fresh water	140,9	mg/l
Normal value in marine water	140,9	mg/l
Normal value for fresh water sediment	552	mg/kg
Normal value for marine water sediment	552	mg/kg
Normal value of STP microorganisms	2251	mg/l
Normal value for the food chain (secondary poisoning)	160	mg/kg
Normal value for the terrestrial compartment	28	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation								500 mg/m ³
Skin								888 mg/kg bw/d



LIQUID ROOFING SYSTEMS

3575000099 - MS 2 PART PRIMER comp. B

Revision nr.13
 Dated 06/06/2022
 Printed on 27/09/2022
 Page n. 7 / 18
 Replaced revision:12 (Dated 10/09/2020)

EN

SECTION 8. Exposure controls/personal protection ... / >>

TOLUENE

Threshold Limit Value

Type	Country	TWA/8h				Remarks / Observations
		mg/m ³	ppm			
AGW	DEU	190	50	760	200	SKIN
MAK	DEU	190	50	760	200	SKIN
VLA	ESP	192	50	384	100	SKIN
VLEP	FRA	76,8	20	384	100	SKIN
HTP	FIN	81	25	380	100	SKIN
TLV	GRC	192	50	384	100	SKIN Buller
GVI/KGVI	HRV	192	50	384	100	SKIN
VLEP	ITA	192	50			SKIN
RD	LTU	192	50	384	100	SKIN
TGG	NLD	150		384		
VLE	PRT	192	50	384	100	SKIN
NDS/NDSch	POL	100		200		SKIN
TLV	ROU	192	50	384	100	SKIN
NPEL	SVK	192	50	384	100	SKIN
WEL	GBR	191	50	384	100	SKIN
OEL	EU	192	50	384	100	SKIN
TLV-ACGIH			20			

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,68	mg/l
Normal value in marine water	0,68	mg/l
Normal value for fresh water sediment	16,39	mg/kg
Normal value for marine water sediment	16,39	mg/kg
Normal value of STP microorganisms	13,61	mg/l
Normal value for the terrestrial compartment	2,89	mg/kg

Route of exposure	Effects on consumers			Effects on workers				
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
Inhalation					384 mg/m ³	384 mg/m ³	192 mg/m ³	192 mg/m ³
Skin								384 mg/kg bw/d



LIQUID ROOFING SYSTEMS

3575000099 - MS 2 PART PRIMER comp. B

Revision nr.13
 Dated 06/06/2022
 Printed on 27/09/2022
 Page n. 8 / 18
 Replaced revision:12 (Dated 10/09/2020)

EN

SECTION 8. Exposure controls/personal protection ... / >>

ETHANOL

Threshold Limit Value

Type	Country	TWA/8h				Remarks / Observations
		mg/m ³	ppm			
AGW	DEU	380	200	1520	800	
MAK	DEU	380	200	1520	800	
VLA	ESP			1910	1000	
VLEP	FRA	1900	1000	9500	5000	
HTP	FIN	1900	1000	2500	1300	
TLV	GRC	1900	1000			
GVI/KGVI	HRV	1900	1000			
RD	LTU	1000	500	1900	1000	
TGG	NLD	260		1900		SKIN
NDS/NDSch	POL	1900				
TLV	ROU	1900	1000	9500	5000	
NPEL	SVK	960	500	1920	1000	
WEL	GBR	1920	1000			
TLV-ACGIH				1884	1000	

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,96	mg/l
Normal value in marine water	0,79	mg/l
Normal value for fresh water sediment	3,6	mg/kg
Normal value for marine water sediment	2,9	mg/kg
Normal value of STP microorganisms	580	mg/l
Normal value for the food chain (secondary poisoning)	380	mg/kg
Normal value for the terrestrial compartment	0,63	mg/kg
Normal value for the atmosphere	NPI	

Route of exposure	Effects on consumers			Effects on workers				
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
Inhalation					NPI	NPI	NPI	950 mg/m ³
Skin					NPI	NPI	NPI	343 mg/kg bw/d



LIQUID ROOFING SYSTEMS

3575000099 - MS 2 PART PRIMER comp. B

Revision nr.13
 Dated 06/06/2022
 Printed on 27/09/2022
 Page n. 9 / 18
 Replaced revision:12 (Dated 10/09/2020)

EN

SECTION 8. Exposure controls/personal protection ... / >>

ETHYL ACETATE

Threshold Limit Value

Type	Country	TWA/8h		Remarks / Observations	
		mg/m ³	ppm		
AGW	DEU	730	200	1460	400
MAK	DEU	750	200	1500	400
VLA	ESP	734	200	1468	400
VLEP	FRA	734	200	1468	400
HTP	FIN	730	200	1470	400
TLV	GRC	734	200	1468	400
GVI/KGVI	HRV	734	200	1468	400
VLEP	ITA	734	200	1468	400
RD	LTU	500	150	1100 (C)	300 (C)
TGG	NLD	734		1468	
VLE	PRT	734	200	1468	400
NDS/NDSch	POL	734		1468	
TLV	ROU	734	200	1468	400
NPEL	SVK	734	200	1468	400
WEL	GBR	734	200	1468	400
OEL	EU	734	200	1468	400
TLV-ACGIH		1441	400		

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,24	mg/l
Normal value in marine water	0,024	mg/l
Normal value for fresh water sediment	1,15	mg/kg
Normal value for marine water sediment	0,115	mg/kg
Normal value of STP microorganisms	650	mg/l
Normal value for the terrestrial compartment	0,148	mg/kg

Route of exposure	Effects on consumers			Effects on workers				
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
Inhalation					1468 mg/m ³	1468 mg/m ³	734 mg/m ³	734 mg/m ³
Skin								63 mg/kg bw/d

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified ; LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

Exposure levels must be kept as low as possible to avoid significant build-up in the organism. Manage personal protective equipment so as to guarantee maximum protection (e.g. reduction in replacement times).

HAND PROTECTION

Protect hands with category III work gloves (see standard EN 374).

The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION

Wear category II professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

Consider the appropriateness of providing antistatic clothing in the case of working environments in which there is a risk of explosion.

EYE PROTECTION

Wear airtight protective goggles (see standard EN 166).

RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the



LIQUID ROOFING SYSTEMS

3575000099 - MS 2 PART PRIMER comp. B

Revision nr.13
Dated 06/06/2022
Printed on 27/09/2022
Page n. 10 / 18
Replaced revision:12 (Dated 10/09/2020)

EN

SECTION 8. Exposure controls/personal protection ... / >>

threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	liquid	
Colour	straw-coloured	
Odour	ammoniacal	
Melting point / freezing point	not available	
Initial boiling point	> 75 °C	
Flammability	not applicable	
Lower explosive limit	not available	
Upper explosive limit	not available	
Flash point	5 °C	Method: Closed cup
Auto-ignition temperature	not available	
Decomposition temperature	not available	
pH	not applicable	
Kinematic viscosity	70 mPa*s	Temperature: 20 °C
Dynamic viscosity	70 mPa*s	
Solubility	insoluble in water	
Partition coefficient: n-octanol/water	not applicable	
Vapour pressure	not available	
Density and/or relative density	0,92 g/cm ³	Temperature: 20 °C
Relative vapour density	not available	
Particle characteristics	not applicable	

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Information not available

9.2.2. Other safety characteristics

Total solids (250°C / 482°F)	51,82 %	
VOC (Directive 2010/75/EU)	46,70 % - 429,68	g/litre
VOC (volatile carbon)	32,68 % - 300,63	g/litre
Explosive properties	not expected	
Oxidising properties	not expected	

SECTION 10. Stability and reactivity

10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

TOLUENE

Avoid exposure to: light.

ETHYL ACETATE

Decomposes slowly into acetic acid and ethanol under the effect of light, air and water.

10.2. Chemical stability

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions

The vapours may also form explosive mixtures with the air.



LIQUID ROOFING SYSTEMS

3575000099 - MS 2 PART PRIMER comp. B

Revision nr.13
Dated 06/06/2022
Printed on 27/09/2022
Page n. 11 / 18
Replaced revision:12 (Dated 10/09/2020)

EN

SECTION 10. Stability and reactivity ... / >>

TOLUENE

Risk of explosion on contact with: fuming sulphuric acid, nitric acid, silver perchlorate, nitrogen dioxide, non-metal halogenates, acetic acid, organic nitrocompounds. May form explosive mixtures with: air. May react dangerously with: strong oxidising agents, strong acids, sulphur.

ETHANOL

Risk of explosion on contact with: alkaline metals, alkaline oxides, calcium hypochlorite, sulphur monofluoride, acetic anhydride, acids, concentrated hydrogen peroxide, perchlorates, perchloric acid, perchloronitrile, mercury nitrate, nitric acid, silver, silver nitrate, ammonia, silver oxide, ammonia, strong oxidising agents, nitrogen dioxide. May react dangerously with: bromoacetylene, chlorine acetylene, bromine trifluoride, chromium trioxide, chromyl chloride, fluorine, potassium tert-butoxide, lithium hydride, phosphorus trioxide, black platinum, zirconium (IV) chloride, zirconium (IV) iodide. Forms explosive mixtures with: air.

ETHYL ACETATE

Risk of explosion on contact with: alkaline metals, hydrides, oleum. May react violently with: fluorine, strong oxidising agents, chlorosulphuric acid, potassium tert-butoxide. Forms explosive mixtures with: air.

10.4. Conditions to avoid

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

ETHANOL

Avoid exposure to: sources of heat, naked flames.

ETHYL ACETATE

Avoid exposure to: light, sources of heat, naked flames.

10.5. Incompatible materials

2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL

Avoid contact with: acids, oxidising agents.

ETHYL ACETATE

Incompatible with: acids, bases, strong oxidants, aluminium, nitrates, chlorosulphuric acid. Incompatible materials: plastic materials.

10.6. Hazardous decomposition products

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.

2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL

In decomposition develops: carbon oxides, nitric oxide, ammonia, nitric acid.

SECTION 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification. It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

TOLUENE

WORKERS: inhalation; contact with the skin.

POPULATION: ingestion of contaminated food or water; inhalation of ambient air; contact with the skin of products containing the substance.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

TOLUENE

Toxic effect on the central and peripheral nervous system with encephalopathy and polyneuritis; irritating for the skin, conjunctiva, cornea and respiratory apparatus.

Interactive effects

TOLUENE

Certain drugs and other industrial products can interfere with the metabolism of the toluene.

ACUTE TOXICITY

ATE (Inhalation) of the mixture:	Not classified (no significant component)
ATE (Oral) of the mixture:	>2000 mg/kg
ATE (Dermal) of the mixture:	Not classified (no significant component)



SECTION 11. Toxicological information ... / >>

ISOPROPANOL

LD50 (Dermal): 12800 mg/kg Rat
LD50 (Oral): 4710 mg/kg Rat
LC50 (Inhalation vapours): 72,6 mg/l/4h Rat

TOLUENE

LD50 (Dermal): 12124 mg/kg Rabbit
LD50 (Oral): 5580 mg/kg Rat
LC50 (Inhalation vapours): 28,1 mg/l/4h Rat

ETHANOL

LD50 (Oral): > 5000 mg/kg Rat
LC50 (Inhalation vapours): 117 mg/l/4h Rat

2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL

LD50 (Oral): 2169 mg/kg OECD Guideline 401, Rat - Sprague-Dawley
STA (Oral): 500 mg/kg estimate from table 3.1.2 of Annex I of the CLP
(figure used for calculation of the acute toxicity estimate of the mixture)

3-AMINOPROPYLTRIETHOXYSILANE

LD50 (Dermal): 4076 mg/kg EPA OTS 798.1100, Rabbit, New Zealand White, 4.29 mL/kg
LD50 (Oral): 1491 mg/kg EPA OTS 798.1175, Rat - Sprague-Dawley, 1,57 mL/kg
LC50 (Inhalation mists/powders): > 5 ppm/4h OECD Guideline 403, Rat - Wistar

AMINES, POLYETHYLENEPOLY-, TRIETHYLENETETRAMINE FRACTION

LD50 (Dermal): 1465 mg/kg OECD Guideline 402, Rabbit
LD50 (Oral): 1716 mg/kg OECD Guideline 401, Rat

SKIN CORROSION / IRRITATION

Corrosive for the skin

2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL
OECD Guideline 404, Rabbit - New Zealand White

3-AMINOPROPYLTRIETHOXYSILANE
OECD Guideline 404

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

3-AMINOPROPYLTRIETHOXYSILANE
OECD Guideline 405

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

Respiratory sensitization

Information not available

Skin sensitization

3-AMINOPROPYLTRIETHOXYSILANE
OECD Guideline 406

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

TOLUENE

Classified in Group 3 (not classifiable as a human carcinogen) by the International Agency for Research on Cancer (IARC) - (IARC, 1999).



LIQUID ROOFING SYSTEMS

3575000099 - MS 2 PART PRIMER comp. B

Revision nr.13
Dated 06/06/2022
Printed on 27/09/2022
Page n. 13 / 18
Replaced revision:12 (Dated 10/09/2020)

EN

SECTION 11. Toxicological information ... / >>

The US Environmental Protection Agency (EPA) affirms that "the data is inadequate for an assessment of the carcinogenic potential".

REPRODUCTIVE TOXICITY

Suspected of damaging the unborn child

Adverse effects on sexual function and fertility

Information not available

Adverse effects on development of the offspring

Information not available

Effects on or via lactation

Information not available

STOT - SINGLE EXPOSURE

May cause drowsiness or dizziness

Target organs

Information not available

Route of exposure

Information not available

STOT - REPEATED EXPOSURE

May cause damage to organs

Target organs

Information not available

Route of exposure

Information not available

ASPIRATION HAZARD

Toxic for aspiration

11.2. Information on other hazards

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with human health effects under evaluation.

SECTION 12. Ecological information

This product is dangerous for the environment and is toxic for aquatic organisms. In the long term, it has negative effects on the aquatic environment.

12.1. Toxicity

FATTY ACIDS, C18-UNSATURATED, DIMERS, OLIGOMERIC REACTION PRODUCTS WITH TALL-OIL FATTY ACIDS AND TRIETHYLENETETRAMINE

LC50 - for Fish	7,07 mg/l/96h OECD Guideline 203, Danio rerio
EC50 - for Crustacea	7,07 mg/l/48h OECD Guideline 202, Daphnia magna
EC50 - for Algae / Aquatic Plants	4,34 mg/l/72h OECD Guideline 201, Pseudokirchneriella subcapitata

AMINES, POLYETHYLENEPOLY-, TRIETHYLENETETRAMINE FRACTION

LC50 - for Fish	330 mg/l/96h U.S EPA- TSCA, 40 CFR Part 797 1400, Pimephales promelas
EC50 - for Crustacea	31,1 mg/l/48h EU Method C.2, Daphnia magna
EC50 - for Algae / Aquatic Plants	20 mg/l/72h OECD Guideline 201, Pseudokirchneriella subcapitata



LIQUID ROOFING SYSTEMS

3575000099 - MS 2 PART PRIMER comp. B

Revision nr.13
Dated 06/06/2022
Printed on 27/09/2022
Page n. 14 / 18
Replaced revision:12 (Dated 10/09/2020)

EN

SECTION 12. Ecological information ... / >>

TOLUENE	
LC50 - for Fish	5,5 mg/l/96h
EC50 - for Crustacea	3,78 mg/l/48h
EC50 - for Algae / Aquatic Plants	134 mg/l/72h

12.2. Persistence and degradability

FATTY ACIDS, C18-UNSATURATED, DIMERS, OLIGOMERIC REACTION PRODUCTS WITH TALL-OIL FATTY ACIDS AND TRIETHYLENETETRAMINE

Solubility in water 40 mg/l Calcolo

TOLUENE
Solubility in water 100 - 1000 mg/l
Rapidly degradable

ETHANOL
Solubility in water 1000 - 10000 mg/l
Rapidly degradable

2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL
Solubility in water > 10000 mg/l
NOT rapidly degradable

ISOPROPANOL
Rapidly degradable

ETHYL ACETATE
Solubility in water > 10000 mg/l
Rapidly degradable

12.3. Bioaccumulative potential

FATTY ACIDS, C18-UNSATURATED, DIMERS, OLIGOMERIC REACTION PRODUCTS WITH TALL-OIL FATTY ACIDS AND TRIETHYLENETETRAMINE

Partition coefficient: n-octanol/water 10,34 Log Kow Calcolo con EPI Suite

TOLUENE
Partition coefficient: n-octanol/water 2,73
BCF 90

ETHANOL
Partition coefficient: n-octanol/water -0,35

2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL
Partition coefficient: n-octanol/water -0,66

ISOPROPANOL
Partition coefficient: n-octanol/water 0,05

ETHYL ACETATE
Partition coefficient: n-octanol/water 0,68
BCF 30

12.4. Mobility in soil

Information not available

12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage \geq than 0,1%.

12.6. Endocrine disrupting properties

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under evaluation.



LIQUID ROOFING SYSTEMS

3575000099 - MS 2 PART PRIMER comp. B

Revision nr.13
Dated 06/06/2022
Printed on 27/09/2022
Page n. 15 / 18
Replaced revision:12 (Dated 10/09/2020)

EN

SECTION 12. Ecological information ... / >>

12.7. Other adverse effects

Information not available

SECTION 13. Disposal considerations

13.1. Waste treatment methods

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

Waste transportation may be subject to ADR restrictions.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information

14.1. UN number or ID number

ADR / RID, IMDG, IATA: 2924

14.2. UN proper shipping name

ADR / RID: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ISOPROPANOL; 2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL)

IMDG: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ISOPROPANOL; 2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL;
FATTY ACIDS, C18-UNSATURATED, DIMERS, OLIGOMERIC REACTION PRODUCTS WITH TALL-OIL FATTY
ACIDS AND TRIETHYLENETETRAMINE)

IATA: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ISOPROPANOL; 2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL)

14.3. Transport hazard class(es)

ADR / RID: Class: 3 Label: 3 (8)



IMDG: Class: 3 Label: 3 (8)



IATA: Class: 3 Label: 3 (8)



14.4. Packing group

ADR / RID, IMDG, IATA: II

14.5. Environmental hazards

ADR / RID: Environmentally Hazardous



IMDG: Marine Pollutant



IATA: NO

For Air transport, environmentally hazardous mark is only mandatory for UN 3077 and UN 3082.



LIQUID ROOFING SYSTEMS

3575000099 - MS 2 PART PRIMER comp. B

Revision nr.13
Dated 06/06/2022
Printed on 27/09/2022
Page n. 16 / 18
Replaced revision:12 (Dated 10/09/2020)

EN

SECTION 14. Transport information ... / >>

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 338 Special provision: -	Limited Quantities: 1 L	Tunnel restriction code: (D/E)
IMDG:	EMS: F-E, S-C	Limited Quantities: 1 L	
IATA:	Cargo: Pass.: Special provision:	Maximum quantity: 5 L Maximum quantity: 1 L A3	Packaging instructions: 363 Packaging instructions: 352

14.7. Maritime transport in bulk according to IMO instruments

Information not relevant

SECTION 15. Regulatory information

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

Seveso Category - Directive 2012/18/EU: P5c-E2

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

Product		
Point	3 - 40	
Contained substance		
Point	75	
Point	48	TOLUENE REACH Reg.: 01-2119471310-51

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors
not applicable

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage \geq than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Flam. Liq. 2	Flammable liquid, category 2
Repr. 2	Reproductive toxicity, category 2
Acute Tox. 4	Acute toxicity, category 4
Asp. Tox. 1	Aspiration hazard, category 1
STOT RE 2	Specific target organ toxicity - repeated exposure, category 2
Skin Corr. 1B	Skin corrosion, category 1B
Skin Corr. 1C	Skin corrosion, category 1C
Eye Dam. 1	Serious eye damage, category 1
Skin Sens. 1	Skin sensitization, category 1
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1



SECTION 16. Other information ... / >>

Aquatic Chronic 1	Hazardous to the aquatic environment, chronic toxicity, category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
H225	Highly flammable liquid and vapour.
H361d	Suspected of damaging the unborn child.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H304	May be fatal if swallowed and enters airways.
H373	May cause damage to organs through prolonged or repeated exposure.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 2020/878 (II Annex of REACH Regulation)
4. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2019/521 (XII Atp. CLP)
16. Delegated Regulation (UE) 2018/1480 (XIII Atp. CLP)
17. Regulation (EU) 2019/1148
18. Delegated Regulation (UE) 2020/217 (XIV Atp. CLP)
19. Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)



LIQUID ROOFING SYSTEMS

3575000099 - MS 2 PART PRIMER comp. B

Revision nr.13
Dated 06/06/2022
Printed on 27/09/2022
Page n. 18 / 18
Replaced revision:12 (Dated 10/09/2020)

EN

SECTION 16. Other information ... / >>

- 20. Delegated Regulation (UE) 2021/643 (XVI Atp. CLP)
- 21. Delegated Regulation (UE) 2021/849 (XVII Atp. CLP)

- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

CALCULATION METHODS FOR CLASSIFICATION

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.

Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.

Changes to previous review:

The following sections were modified:

01 / 02 / 03 / 08 / 09 / 10 / 11 / 12 / 15 / 16.