

3.1 Substances:

Not applicable

3.2 Mixtures:

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark
2-butanone oxime	96-29-7 202-496-6	0.1%<C<1 %	Carc. 2; H351 Acute Tox. 4; H312 Eye Dam. 1; H318 Skin Sens. 1; H317	(1)(10)	Constituent

(1) For H-statements in full: see heading 16

(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

SECTION 4: First aid measures

4.1 Description of first aid measures:

General:

If you feel unwell, seek medical advice.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Wash immediately with lots of water. Soap may be used. Take victim to a doctor if irritation persists.

After eye contact:

Rinse with water. Take victim to an ophthalmologist if irritation persists.

After ingestion:

Rinse mouth with water. Consult a doctor/medical service if you feel unwell.

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

4.2.1 Acute symptoms

After inhalation:

No effects known.

After skin contact:

No effects known.

After eye contact:

No effects known.

After ingestion:

No effects known.

4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1 Extinguishing media:

5.1.1 Suitable extinguishing media:

Polyvalent foam. ABC powder. Carbon dioxide.

5.1.2 Unsuitable extinguishing media:

No unsuitable extinguishing media known.

5.2 Special hazards arising from the substance or mixture:

Upon combustion: formation of CO, CO₂ and small quantities of nitrous vapours.

5.3 Advice for firefighters:

5.3.1 Instructions:

No specific fire-fighting instructions required.

5.3.2 Special protective equipment for fire-fighters:

Gloves. Protective clothing. Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

No naked flames.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gloves. Protective clothing.

Suitable protective clothing

See heading 8.2

6.2 Environmental precautions:

Contain leaking substance. Use appropriate containment to avoid environmental contamination.

6.3 Methods and material for containment and cleaning up:

Scoop solid spill into closing containers. Clean contaminated surfaces with a soap solution. Wash clothing and equipment after handling.

6.4 Reference to other sections:

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1 Precautions for safe handling:

Keep away from naked flames/heat. Observe strict hygiene. Keep container tightly closed.

7.2 Conditions for safe storage, including any incompatibilities:

7.2.1 Safe storage requirements:

Store in a dry area. Store at room temperature. Meet the legal requirements. Max. storage time: 1 year(s).

7.2.2 Keep away from:

Heat sources.

7.2.3 Suitable packaging material:

Synthetic material.

7.2.4 Non suitable packaging material:

No data available

7.3 Specific end use(s):

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters:

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

Germany

Butanonoxim	Time-weighted average exposure limit 8 h (TRGS 900)	0.3 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	1 mg/m ³

b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

If applicable and available it will be listed below.

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

DNEL - Workers

2-butanone oxime

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Acute systemic effects dermal	2.5 mg/kg bw/day	
	Long-term systemic effects dermal	1.3 mg/kg bw/day	
	Long-term systemic effects inhalation	9 mg/m ³	
	Long-term local effects inhalation	3.33 mg/m ³	

DNEL - General population

2-butanone oxime

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Acute systemic effects dermal	1.5 mg/kg bw/day	
	Long-term systemic effects dermal	0.78 mg/kg bw/day	
	Long-term systemic effects inhalation	2.7 mg/m ³	
	Long-term local effects inhalation	2 mg/m ³	

PNEC

Reason for revision: ATP4 Publication date: 2006-03-13 Date of revision: 2015-02-17

2-butanone oxime

Compartments	Value	Remark
Fresh water	0.256 mg/l	
Aqua (intermittent releases)	0.118 mg/l	
STP	177 mg/l	

8.1.5 Control banding

If applicable and available it will be listed below.

8.2 Exposure controls:

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

8.2.2 Individual protection measures, such as personal protective equipment

Observe strict hygiene. Keep container tightly closed. Do not eat, drink or smoke during work.

a) Respiratory protection:

Respiratory protection not required in normal conditions.

b) Hand protection:

Gloves.

c) Eye protection:

Safety glasses.

d) Skin protection:

Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical form	Paste
Odour	Characteristic odour
Odour threshold	No data available
Colour	Black
Particle size	No data available
Explosion limits	No data available
Flammability	Not easily combustible
Log Kow	Not applicable (mixture)
Dynamic viscosity	No data available
Kinematic viscosity	No data available
Melting point	No data available
Boiling point	No data available
Flash point	> 200°C
Evaporation rate	No data available
Relative vapour density	No data available
Vapour pressure	No data available
Solubility	water ; insoluble
Relative density	> 1.0
Decomposition temperature	No data available
Auto-ignition temperature	No data available
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	No data available

9.2 Other information:

Surface tension	No data available
Absolute density	> 1000kg/m ³

SECTION 10: Stability and reactivity

10.1 Reactivity:

Temperature above flashpoint: higher fire/explosion hazard.

10.2 Chemical stability:

Stable under normal conditions.

10.3 Possibility of hazardous reactions:

No data available.

10.4 Conditions to avoid:

Keep away from naked flames/heat.

10.5 Incompatible materials:

No data available.

10.6 Hazardous decomposition products:

Upon combustion: formation of CO, CO₂ and small quantities of nitrous vapours.

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

11.1.1 Test results

Acute toxicity

Sealant 5590

No (test) data on the mixture available
2-butanone oxime

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	2326mg/kg bw		Rat (male)	Experimental value	
Dermal	LD50		> 2000mg/kg		Rat	Literature	
Dermal	LD50	Equivalent to OECD 402	> 1000mg/kg bw	24 h	Rabbit (male/female)	Experimental value	
Inhalation (vapours)	LC50	Equivalent to OECD 403	> 4.83mg/l air	4 h	Rat (male/female)	Experimental value	

Judgement is based on the relevant ingredients

Conclusion

Not classified for acute toxicity

Corrosion/irritation

Sealant 5590

No (test) data on the mixture available

2-butanone oxime

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Corrosive	Equivalent to OECD 405		24; 72 hours	Rabbit	Experimental value	
Skin	Irritating	Other	3 minutes		Rabbit	Experimental value	

Judgement is based on the relevant ingredients

Conclusion

Not classified as irritating to the skin

Not classified as irritating to the eyes

Not classified as irritating to the respiratory system

Respiratory or skin sensitisation

Sealant 5590

No (test) data on the mixture available

2-butanone oxime

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing	Equivalent to OECD 406	24 h	24; 48 hours	Guinea pig (female)	Experimental value	

Judgement is based on the relevant ingredients

Conclusion

Not classified as sensitizing for inhalation

Not classified as sensitizing for skin

Specific target organ toxicity

Sealant 5590

No (test) data on the mixture available

2-butanone oxime

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral	LOAEL	US EPA	40mg/kg bw/day	General	Clinical signs; mortality; body weight; food consumption	13 weeks (5 days/week)	Rat (male/female)	Experimental value
Oral	NOAEL	US EPA	< 40mg/kg bw/day	Blood	Change in the haemogramme/ blood composition	13 weeks (5 days/week)	Rat (male/female)	Experimental value
Oral	NOEL	US EPA	125mg/kg bw/day	Central nervous system	Behavioural disturbances	13 weeks (5 days/week)	Rat (male/female)	Experimental value
Oral	NOAEL	US EPA	312ppm	Blood	Change in the haemogramme/ blood composition	13 week(s)	Rat (female)	Experimental value
Oral	NOAEL	US EPA	625ppm	Blood	Change in the haemogramme/ blood composition	13 week(s)	Rat (male)	Experimental value
Inhalation (vapours)	NOAEC	Equivalent to OECD 412	90mg/m ³ air	Blood	Change in the haemogramme/ blood composition	4 weeks (6h/day, 5 days/week)	Rat (male/female)	Experimental value

Judgement is based on the relevant ingredients

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

Sealant 5590

No (test) data on the mixture available

2-butanone oxime

Result	Method	Test substrate	Effect	Value determination
Ambiguous	Equivalent to OECD 476	Mouse (lymphoma L5178Y cells)		Experimental value
Negative	Equivalent to OECD 471	Bacteria (<i>S.typhimurium</i>)		Experimental value
Negative	Equivalent to OECD 482	Rat liver cells		Experimental value

Mutagenicity (in vivo)

Sealant 5590

No (test) data on the mixture available

2-butanone oxime

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	Other	3 day(s)	<i>Drosophila melanogaster</i> (male)	Male reproductive organ	Experimental value
Negative	Other		Rat (male/female)		Experimental value

Carcinogenicity

Sealant 5590

No (test) data on the mixture available

2-butanone oxime

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Organ	Effect
Inhalation (vapours)	NOAEC	Other	270ppm	13, 52 & 78 weeks (6h/day, 5 days/week)	Mouse (male)	Experimental value	Liver	Histopathological changes
Inhalation (vapours)	NOAEC	Other	1350ppm	13, 52 & 78 weeks (6h/day, 5 days/week)	Mouse (female)	Experimental value	Liver	Histopathological changes
Inhalation (vapours)	NOAEC	Other	270ppm	13, 52, 78 & 113 weeks (6h/day, 5 days/week)	Rat (male)	Experimental value	Liver	Histopathological changes
Inhalation (vapours)	NOAEC	Other	1350ppm	13, 52, 78 & 113 weeks (6h/day, 5 days/week)	Rat (male)	Experimental value	Liver	Histopathological changes

Reproductive toxicity

No (test) data on the mixture available 2-butanone oxime

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEL (F1)	OECD 414	600mg/kg bw/day	10 day(s)	Rat	No effect		Experimental value
	LOAEL (P)	OECD 414	60mg/kg bw/day	10 day(s)	Rat	Spleen enlargement/affection	Spleen	Experimental value
Effects on fertility	NOAEL	US EPA	≥ 200mg/kg/d		Rat (male/female)			Experimental value

Judgement is based on the relevant ingredients

Conclusion CMR

Not classified for reprotoxic or developmental toxicity

Not classified for mutagenic or genotoxic toxicity

Not classified for carcinogenicity

Toxicity other effects

Sealant 5590

No (test) data on the mixture available

Chronic effects from short and long-term exposure

Sealant 5590

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation.

SECTION 12: Ecological information

12.1 Toxicity:

Sealant 5590

No (test) data on the mixture available

2-butanone oxime

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	> 100mg/l	96 h	Oryzias latipes	Semi-static system	Fresh water	Experimental value; GLP
Acute toxicity invertebrates	EC50	OECD 202	201mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; GLP
Toxicity algae and other aquatic plants	EC50	OECD 201	11.8mg/l	72 h	Scenedesmus sp.	Static system	Fresh water	Experimental value; GLP
	NOEC	OECD 201	2.56mg/l	72 h	Scenedesmus sp.	Static system	Fresh water	Experimental value; GLP

Judgement is based on the relevant ingredients of the mixture

Conclusion

Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008

12.2 Persistence and degradability:

No straightforward conclusion can be drawn based upon the available numerical values

12.3 Bioaccumulative potential:

Sealant 5590

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

2-butanone oxime

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF	OECD 305	0.5 - 5.8	42 day(s)	Cyprinus carpio	Experimental value

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 117		0.63		Experimental value

Conclusion

Does not contain bioaccumulative component(s)

12.4 Mobility in soil:

No (test) data on mobility of the components available

12.5 Results of PBT and vPvB assessment:

Due to insufficient data no statement can be made whether the component(s) fulfil(s) the criteria of PBT and vPvB according to Annex XIII of Regulation (EC) No 1907/2006.

12.6 Other adverse effects:

Sealant 5590

Global warming potential (GWP)

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

2-butanone oxime

Ground water

Ground water pollutant

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1 Waste treatment methods:

13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).

08 04 10 (wastes from MFSU of adhesives and sealants (including waterproofing products): waste adhesives and sealants other than those mentioned in 08 04 09). Depending on branch of industry and production process, also other waste codes may be applicable. Can be considered as non hazardous waste according to Directive 2008/98/EC.

13.1.2 Disposal methods

Remove waste in accordance with local and/or national regulations. Do not discharge into drains or the environment. Dispose of at authorized waste collection point.

13.1.3 Packaging/Container

Waste material code packaging (Directive 2008/98/EC). 15 01 02 (plastic packaging).

SECTION 14: Transport information

Road (ADR)

14.1 UN number:

Transport	Not subject
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14.2 UN proper shipping name:

14.3 Transport hazard class(es):

Hazard identification number	
Class	
Classification code	

14.4 Packing group:

Packing group	
Labels	

14.5 Environmental hazards:

Environmentally hazardous substance mark	no
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14.6 Special precautions for user:

Special provisions	
Limited quantities	

Rail (RID)

14.1 UN number:

Transport	Not subject
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14.2 UN proper shipping name:

14.3 Transport hazard class(es):

Hazard identification number	
Class	
Classification code	

14.4 Packing group:

Packing group	
Labels	

14.5 Environmental hazards:

Environmentally hazardous substance mark	no
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14.6 Special precautions for user:

Special provisions	
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Limited quantities	
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Inland waterways (ADN)

14.1 UN number:	Transport	Not subject
14.2 UN proper shipping name:		
14.3 Transport hazard class(es):		
Class		
Classification code		
14.4 Packing group:		
Packing group		
Labels		
14.5 Environmental hazards:		
Environmentally hazardous substance mark	no	
14.6 Special precautions for user:		
Special provisions		
Limited quantities		

Sea (IMDG/IMSBC)

14.1 UN number:	Transport	Not subject
14.2 UN proper shipping name:		
14.3 Transport hazard class(es):		
Class		
14.4 Packing group:		
Packing group		
Labels		
14.5 Environmental hazards:		
Marine pollutant		
Environmentally hazardous substance mark	no	
14.6 Special precautions for user:		
Special provisions		
Limited quantities		
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:		
Annex II of MARPOL 73/78		

Air (ICAO-TI/IATA-DGR)

14.1 UN number:	Transport	Not subject
14.2 UN proper shipping name:		
14.3 Transport hazard class(es):		
Class		
14.4 Packing group:		
Packing group		
Labels		
14.5 Environmental hazards:		
Environmentally hazardous substance mark	no	
14.6 Special precautions for user:		
Special provisions		
Passenger and cargo transport: limited quantities: maximum net quantity per packaging		

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
1%	

REACH Annex XVII - Restriction

Contains component(s) subject to restrictions of Annex XVII of Regulation (EC) No 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

2-butanone oxime	Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8	1. Shall not be used in: — ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, — tricks and jokes, — games for one or more participants, or any article intended to be used as such, even with ornamental aspects, 2. Articles not complying with paragraph 1 shall not be placed on the market. 3. Shall not be placed on the market if they contain a colouring agent,
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	<p>types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F;</p> <p>(b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10;</p> <p>(c) hazard class 4.1;</p> <p>(d) hazard class 5.1.</p>	<p>unless required for fiscal reasons, or perfume, or both, if they:</p> <ul style="list-style-type: none"> — can be used as fuel in decorative oil lamps for supply to the general public, and, — present an aspiration hazard and are labelled with R65 or H304,4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met: <p>a) lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: “Keep lamps filled with this liquid out of the reach of children”; and, by 1 December 2010, “Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life- threatening lung damage”;</p> <p>b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: “Just a sip of grill lighter may lead to life threatening lung damage”;</p> <p>c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled R65 or H304, intended for supply to the general public.7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.’</p>
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National legislation The Netherlands

Sealant 5590

Waste identification (the Netherlands)	LWCA (the Netherlands): KGA category 05
Waterbezwaarlijkheid	11

National legislation Germany

Sealant 5590

WGK	1; Classification water polluting based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 4)
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2. butanone oxime

MAK - Krebserzeugend Kategorie	2
TA-Luft	5.2.5; I

National legislation France

Sealant 5590

No data available

National legislation Belgium

Sealant 5590

No data available

Other relevant data

Sealant 5590

No data available

15.2 Chemical safety assessment:

No chemical safety assessment is required.

SECTION 16: Other information

Full text of any H-statements referred to under headings 2 and 3:

H312 Harmful in contact with skin.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H351 Suspected of causing cancer.

(*) = INTERNAL CLASSIFICATION BY BIG

PBT-substances = persistent, bioaccumulative and toxic substances

DSD Dangerous Substance Directive

DPD Dangerous Preparation Directive

CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.

Version History.

Version 1.0 June 1st 2015 New release for Classification, Labelling Packaging Regulations

