

## SAFETY DATA SHEET

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

**Trade name or designation of the mixture** HumiSeal 1R32A-2

**Registration number** -

**Synonyms** None.

**Product code** HumiSeal Europe 1R32 A-2

**Issue date** 16-June-2015

**Version number** 05

**Revision date** 14-September-2022

**Supersedes date** 02-June-2020

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

**Identified uses** Protective Coating for Printed Circuit Board

**Uses advised against** No other uses are advised.

#### 1.3. Details of the supplier of the safety data sheet

##### Supplier

**Company name** HUMISEAL EUROPE LTD.  
**Address** 505 Eskdale Road  
Winnersh  
Wokingham Berkshire RG41 5TU  
UK

**Division** A CHASE CORPORATION COMPANY

**Telephone** General Assistance +44 (0) 118 944 2333

**e-mail** europetechsupport@chasecorp.com

**Contact person** Not available.

**1.4. Emergency telephone number** Chemtrec U.K. +44 (0) 870 820 0418

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

#### Classification according to Regulation (EC) No 1272/2008 as amended

##### Physical hazards

Flammable liquids Category 2 H225 - Highly flammable liquid and vapour.

##### Health hazards

Serious eye damage/eye irritation Category 2 H319 - Causes serious eye irritation.

Specific target organ toxicity - single exposure Category 3 narcotic effects H336 - May cause drowsiness or dizziness.

**Hazard summary** May be ignited by heat, sparks or flames. May cause drowsiness or dizziness. Causes serious eye irritation. Occupational exposure to the substance or mixture may cause adverse health effects.

#### 2.2. Label elements

**Label according to Regulation (EC) No. 1272/2008 as amended****Contains:** Butanone, n-Butyl acetate**Hazard pictograms****Signal word** Danger**Hazard statements**

H225 Highly flammable liquid and vapour.  
 H319 Causes serious eye irritation.  
 H336 May cause drowsiness or dizziness.

**Precautionary statements****Prevention**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P233 Keep container tightly closed.  
 P235 Keep cool.  
 P240 Ground and bond container and receiving equipment.  
 P241 Use explosion-proof electrical/ventilating/lighting equipment.  
 P242 Use non-sparking tools.  
 P243 Take action to prevent static discharges.  
 P261 Avoid breathing mist/vapours.

**Response**

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P312 Call a POISON CENTRE/doctor if you feel unwell.  
 P370 + P378 In case of fire: Use appropriate media to extinguish.

**Storage**

P403 + P235 Store in a well-ventilated place. Keep cool.

**Disposal**

Not available.

**Supplemental label information**

3.2 % of the mixture consists of component(s) of unknown acute oral toxicity. 99.9 % of the mixture consists of component(s) of unknown acute dermal toxicity. 3.2 % of the mixture consists of component(s) of unknown acute inhalation toxicity. 3.2 % of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 3.2 % of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment. EUH066 - Repeated exposure may cause skin dryness or cracking.

**2.3. Other hazards**

This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII. The product does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**SECTION 3: Composition/information on ingredients****Mixture****General information**

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
n-Butyl acetate	80 - < 90	123-86-4 204-658-1	-	607-025-00-1	#
<b>Classification:</b> Flam. Liq. 3;H226, STOT SE 3;H336					
Butanone	10 - < 20	78-93-3 201-159-0	-	606-002-00-3	#
<b>Classification:</b> Flam. Liq. 2;H225, Eye Irrit. 2;H319, STOT SE 3;H336					

**List of abbreviations and symbols that may be used above**

ATE: Acute toxicity estimate.

M: M-factor

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. #: This substance has been assigned Union workplace exposure limit(s).

**Composition comments**

The full text for all H-statements is displayed in section 16.

**SECTION 4: First aid measures****General information**

Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

#### 4.1. Description of first aid measures

<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison centre or doctor/physician if you feel unwell.
<b>Skin contact</b>	Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. Get medical attention if symptoms occur.

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

May cause drowsiness or dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

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

Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

### SECTION 5: Firefighting measures

**General fire hazards** Highly flammable liquid and vapour.

#### 5.1. Extinguishing media

**Suitable extinguishing media** Water fog. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

#### 5.2. Special hazards arising from the substance or mixture

Vapours may form explosive mixtures with air. Vapours may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.

#### 5.3. Advice for firefighters

**Special protective equipment for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Special fire fighting procedures** In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

#### Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

### SECTION 6: Accidental release measures

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

**For non-emergency personnel** Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapours. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**For emergency responders** Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Avoid breathing mist/vapours. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. Use personal protection recommended in Section 8 of the SDS.

#### 6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

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

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil etc) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools.

**Large Spills:** Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

**Small Spills:** Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

#### 6.4. Reference to other sections

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist/vapours. Avoid contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

**7.2. Conditions for safe storage, including any incompatibilities**

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Keep container tightly closed. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

**7.3. Specific end use(s)**

Not available.

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Occupational exposure limits****UK. EH40 Workplace Exposure Limits (WELs)**

Components	Type	Value
Butanone (CAS 78-93-3)	STEL	899 mg/m3 300 ppm
	TWA	600 mg/m3 200 ppm
n-Butyl acetate (CAS 123-86-4)	STEL	966 mg/m3 200 ppm
	TWA	724 mg/m3 150 ppm

**EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU**

Components	Type	Value
Butanone (CAS 78-93-3)	STEL	900 mg/m3 300 ppm
	TWA	600 mg/m3 200 ppm
n-Butyl acetate (CAS 123-86-4)	STEL	723 mg/m3 150 ppm
	TWA	241 mg/m3 50 ppm

**Biological limit values****UK. EH40 Biological Monitoring Guidance Values (BMGVs)**

Components	Value	Determinant	Specimen	Sampling Time
Butanone (CAS 78-93-3)	70 umol/l	Butan-2-one	Urine	*

\* - For sampling details, please see the source document.

**Recommended monitoring procedures**

Follow standard monitoring procedures.

**Derived no effect levels (DNELs)**

Not available.

**Predicted no effect concentrations (PNECs)**

Not available.

**Exposure guidelines****UK EH40 WEL: Skin designation**

Butanone (CAS 78-93-3)

Can be absorbed through the skin.

**8.2. Exposure controls****Appropriate engineering controls**

Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

**Individual protection measures, such as personal protective equipment****General information**

Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye/face protection**

Chemical respirator with organic vapour cartridge and full facepiece.

**Skin protection****- Hand protection**

Wear appropriate chemical resistant gloves.

- Other	Wear suitable protective clothing.
Respiratory protection	Chemical respirator with organic vapour cartridge and full facepiece.
Thermal hazards	Not applicable.
Hygiene measures	When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Appearance

Physical state	Liquid.
Form	Not available.
Colour	Clear.
Odour	Aromatic
Odour threshold	Not available.
pH	Does not apply.
Melting point/freezing point	-86.64 °C (-123.95 °F) estimated
Initial boiling point and boiling range	79.59 °C (175.26 °F) estimated
Flash point	7.0 °C (44.6 °F)
Evaporation rate	3.6 BuAc
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	1.3 % estimated
Explosive limit – upper (%)	11.2 % estimated
Vapour pressure	32.24 hPa estimated
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Negligible
Solubility (other)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	425 °C (797 °F) estimated
Decomposition temperature	Not available.
Viscosity	190 - 250 cP
Viscosity temperature	25 °C (77 °F)
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

### 9.2. Other information

Brookfield viscosity	190 - 250 cP
Density	0.87 g/cm <sup>3</sup> estimated
Miscible (water)	Negligible
Percent volatile	65 - 72 % v/v estimated
Specific gravity	0.87 estimated
VOC	645 g/l

## SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Contact with incompatible materials.

**10.5. Incompatible materials** Strong oxidising agents. Amines. Ammonia. Caustics. Isocyanates. Nitrates.

**10.6. Hazardous decomposition products** No hazardous decomposition products are known.

## SECTION 11: Toxicological information

**General information** Occupational exposure to the substance or mixture may cause adverse effects.

### Information on likely routes of exposure

**Inhalation** May cause drowsiness or dizziness. Headache. Nausea, vomiting. Prolonged inhalation may be harmful.

**Eye contact** Causes serious eye irritation.

**Ingestion** May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

**Symptoms** May cause drowsiness or dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

### 11.1. Information on toxicological effects

**Acute toxicity** Not known.

Product	Species	Test Results
HumiSeal 1R32A-2		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	51610 mg/kg
<b>Inhalation</b>		
LC50	Wistar rat	336 mg/l, 4 Hours
<b>Oral</b>		
LD50	Rat	9863 mg/kg

Components	Species	Test Results
Butanone (CAS 78-93-3)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	8054 mg/kg
<b>Inhalation</b>		
<i>Vapour</i>		
LC50	Rat	34 mg/l, 4 hours
<b>Oral</b>		
LD50	Rat	2193 mg/kg
		2054 mg/kg

n-Butyl acetate (CAS 123-86-4)

#### **Acute**

##### **Dermal**

LD50 Rabbit 14110 mg/kg

##### **Inhalation**

###### *Vapour*

LC50 Rat 23.4 mg/l, 4 hours

##### **Oral**

LD50 Rat 10760 mg/kg

**Skin corrosion/irritation** Due to partial or complete lack of data the classification is not possible.

**Serious eye damage/eye irritation** Causes serious eye irritation.

**Respiratory sensitisation** Due to partial or complete lack of data the classification is not possible.

**Skin sensitisation** Due to partial or complete lack of data the classification is not possible.

**Germ cell mutagenicity** Due to partial or complete lack of data the classification is not possible.

**Carcinogenicity** Due to partial or complete lack of data the classification is not possible.

**Reproductive toxicity** Due to partial or complete lack of data the classification is not possible.

**Specific target organ toxicity - single exposure** May cause drowsiness or dizziness.

**Specific target organ toxicity - repeated exposure** Due to partial or complete lack of data the classification is not possible.

<b>Aspiration hazard</b>	Due to partial or complete lack of data the classification is not possible.
<b>Mixture versus substance information</b>	No information available.

## SECTION 12: Ecological information

**12.1. Toxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product	Species		Test Results
HumiSeal 1R32A-2			
	<b>Aquatic</b>		
	Crustacea	EC50 Daphnia	25967.7422, 48 hours
	Fish	LC50 Fish	189.333, 96 hours
	<i>Acute</i>		
	Crustacea	EC50 Daphnia	1987.0968, 48 hours estimated
	Fish	LC50 Fish	16184.502, 96 hours estimated

**12.2. Persistence and degradability** No data is available on the degradability of any ingredients in the mixture.

### 12.3. Bioaccumulative potential

#### Partition coefficient

##### n-octanol/water (log Kow)

Butanone (CAS 78-93-3)	0.29
n-Butyl acetate (CAS 123-86-4)	1.78

**Bioconcentration factor (BCF)** Not available.

**12.4. Mobility in soil** No data available.

**12.5. Results of PBT and vPvB assessment** This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

**12.6. Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**Residual waste** Not available.

**Contaminated packaging** Not available.

**EU waste code** Not available.

**Disposal methods/information** Dispose of contents/container in accordance with local/regional/national/international regulations.

## SECTION 14: Transport information

### ADR

<b>14.1. UN number</b>	UN1263
<b>14.2. UN proper shipping name</b>	Paint
<b>14.3. Transport hazard class(es)</b>	
Class	3
Subsidiary risk	-
Label(s)	3
Hazard No. (ADR)	33
Tunnel restriction code	D/E
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Not available.

### RID

<b>14.1. UN number</b>	UN1263
<b>14.2. UN proper shipping name</b>	Paint
<b>14.3. Transport hazard class(es)</b>	
Class	3
Subsidiary risk	-
Label(s)	3
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Not available.

## ADN

14.1. UN number	UN1263
14.2. UN proper shipping name	Paint
14.3. Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
14.4. Packing group	II
14.5. Environmental hazards	No.
14.6. Special precautions for user	Not available.

## IATA

14.1. UN number	UN1263
14.2. UN proper shipping name	PAINT
14.3. Transport hazard class(es)	
Class	3
Subsidiary risk	-
14.4. Packing group	II
14.5. Environmental hazards	No.
ERG Code	3L
14.6. Special precautions for user	Not available.

### Other information

Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

## IMDG

14.1. UN number	UN1263
14.2. UN proper shipping name	PAINT
14.3. Transport hazard class(es)	
Class	3
Subsidiary risk	-
14.4. Packing group	II
14.5. Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-D
14.6. Special precautions for user	Not available.
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

ADN; ADR; IATA; IMDG; RID



## SECTION 15: Regulatory information

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

#### EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended

Not listed.



- Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**  
Not listed.
- Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**  
Not listed.
- Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**  
Not listed.
- Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**  
Not listed.
- Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**  
Not listed.
- Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**  
Not listed.

#### Authorisations

- Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**  
Not listed.

#### Restrictions on use

- Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**  
Butanone (CAS 78-93-3)
- Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**  
Not listed.

#### Other EU regulations

- Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**  
Butanone (CAS 78-93-3)  
n-Butyl acetate (CAS 123-86-4)

#### Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

#### National regulations

Not available.

#### 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

#### List of abbreviations

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.  
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.  
CAS: Chemical Abstract Service.  
CEN: European Committee for Standardization.  
IATA: International Air Transport Association.  
IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.  
IMDG: International Maritime Dangerous Goods.  
MARPOL: International Convention for the Prevention of Pollution from Ships.  
PBT: Persistent, bioaccumulative and toxic.  
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.  
STEL: Short term exposure limit.  
TWA: Time Weighted Average.  
vPvB: Very persistent and very bioaccumulative.

#### References

Not available.

#### Information on evaluation method leading to the classification of mixture

Not available.

#### Full text of any H-statements not written out in full under Sections 2 to 15

H225 Highly flammable liquid and vapour.  
H226 Flammable liquid and vapour.  
H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.

#### Revision information

This document has undergone significant changes and should be reviewed in its entirety.

#### Training information

Not available.

**Disclaimer**

The information offered in this data sheet is designed only as guidance for the safe use, storage and handling of the product. This information is correct to the best of our knowledge and belief at the date of publication, however, no guarantee is made to its accuracy. This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. This material is intended for industrial use only. No warranty, expressed or implied is made.