1. IDENTIFICATION OF THE SUBSTRATE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name/designation: Alumasc PVC Contact Adhesive.

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

Relevant identified uses: Adhesive.

1.3 Supplier details

Alumasc Building Products Ltd
White House Works, Bold Road, Sutton, St Helens, Merseyside, United Kingdom, WA9 4JG
Tel: +44 (0)1744 648400
e-mail: technical@alumascroofing.com

1.4 Emergency telephone number

Association / Organisation:National Poisons Information Service
Emergency telephone numbers:0344 892 0111 (Healthcare professionals only)
Other emergency telephone numbers Alumasc Building Products: +44 17 4464 8400
(Mon-Thurs – 08.30-17.00 Fri – 08.30-16.00)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Considered a hazardous mixture according to Reg. (EC) No 1272/2008 and their amendments. Classified as Dangerous Goods for transport purposes.

Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567
H336 - Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, H225 - Flammable Liquids Category 2, H319 - Serious Eye Damage/Eye Irritation Category 2.

Legend:
1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567.

2.2 Label elements

Hazard pictures:

Signal word: Danger.

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

Supplementary statements: EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statements prevention:
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241 Use explosion-proof equipment.
P243 Take action to prevent static discharges.
P271 Use only outdoors in a well-ventilated area.
P240 Ground and bond container and receiving equipment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements response:	P370+P378In case of fire: Use alcohol resistant foam or normal protein foam to extinguish. P303+P361+P353IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+P340IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P312Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
Precautionary statements storage:	P405 Store locked up. P403+P233 Store in a well-ventilated place. Keep container tightly closed.
Precautionary statements disposal:	P501: Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

2.3 Other hazards

Acetone: Listed in the Europe Regulation (EC) No 1907/2006 – Annex XVII (Restrictions may apply).
Methyl Ethyl Ketone@Listed in the Europe Regulation (EC) No 1907/2006 – Annex XVII (Restrictions may apply).

3. COMPOSITION AND INFORMATION ABOUT THE COMPONENTS

3.1 Substances

See 'Composition on ingredients' in Section 3.2.

3.2 Mixtures

1. CAS No 2. EC No 3. Index No 4. REACH No	**%[weight]**	**Name**	**Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567**	**SCL / M-Factor**	**Nanoform Particle Characteristics**
1. 67-64-1 2. 200-662-2 3. 606-001-00-8 4. Not available	50-65	Acetone *	Flammable Liquids Category 2, Serious Eye Damage/Eye Irritation Category 2, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3; H225, H319, H336 [2]	Not available	Not available
1. 78-93-3 2. 201-159-0 3. 606-002-00-3 4. Not available	10-20	Methyl Ethyl Ketone *	Flammable Liquids Category 2, Serious Eye Damage/Eye Irritation Category 2, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3; H225, H319, H336 [2]	Not available	Not available
Legend:	1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties.				

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact: If this product comes in contact with the eyes:
Wash out immediately with fresh running water.
Irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
Seek medical attention without delay; if pain persists or recurs seek medical attention.
Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin contact: If skin contact occurs:
Immediately remove all contaminated clothing including footwear.
Flush skin and hair with running water (and soap if available).
Seek medical attention in the event of irritation.

Inhalation: If fumes or combustion products are inhaled, remove from contaminated area.
Lay patient down. Keep warm and rested.
Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
Transport to hospital, or doctor.

Ingestion: Immediately give a glass of water.
First aid is not generally required, if in doubt, contact a Poisons Information Centre or a doctor.
If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11.

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

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

For acute or short term repeated exposures to Acetone:

- Symptoms of acetone exposure approximate ethanol intoxication.
- About 20% is expired by the lungs and the rest is metabolised. Alveolar air half-life is about 4 hours following two hour inhalation at levels near the Exposure Standard; in overdose, saturable metabolism and limited clearance, prolong the elimination half-life to 25-30 hours.
- There are no known antidotes and treatment should involve the usual methods of decontamination followed by supportive care. [Ellenhorn and Barceloux: Medical Toxicology].

Management:
Measurement of serum and urine acetone concentrations may be useful to monitor the severity of ingestion or inhalation.

Inhalation Management:

- Maintain a clear airway, give humidified oxygen and ventilate if necessary.
- If respiratory irritation occurs, assess respiratory function and, if necessary, perform chest X-rays to check for chemical pneumonitis. Consider the use of steroids to reduce the inflammatory response.
- Treat pulmonary oedema with PEEP or CPAP ventilation.

Dermal Management:

- Remove any remaining contaminated clothing, place in double sealed, clear bags, label and store in secure area away from patients and staff. Irrigate with copious amounts of water.
- An emollient may be required.

Eye Management:

- Irrigate thoroughly with running water or saline for 15 minutes.
- Stain with fluorescein and refer to an ophthalmologist if there is any uptake of the stain.

Oral Management:

- No GASTRIC LAVAGE OR EMETIC.
- Encourage oral fluids.

Systemic Management:

- Monitor blood glucose and arterial pH.
- Ventilate if respiratory depression occurs.
- If patient unconscious, monitor renal function.
- Symptomatic and supportive care.

The Chemical Incident Management Handbook:
Guy's and St. Thomas' Hospital Trust, 2000
BIOLOGICAL EXPOSURE INDEX
These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):
DeterminantSampling TimeIndexComments
Acetone in urineEnd of shift50 mg/LNS
NS: Non-specific determinant; also observed after exposure to other material

Basic treatment:
- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- Monitor and treat, where necessary, for pulmonary oedema .
- Monitor and treat, where necessary, for shock.
- Anticipate seizures.
- **DO NOT** use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

Advanced treatment:
- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

BRONSTEIN, A.C. and CURRANCE, P.L.
EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994.

5. FIRE-FIGHTING MEASSURES

5.1 Extinguishing media

Alcohol stable foam.
Dry chemical powder.
BCF (where regulations permit).

5.2 Special hazards arising from the substance or mixture

Fire incompatibility:
Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

5.3 Advice for fire-fighters

Fire-fighting:
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear full body protective clothing with breathing apparatus.
- Fight fire from a safe distance, with adequate cover.

Fire/explosion hazard:
- Liquid and vapour are highly flammable.
- Severe fire hazard when exposed to heat, flame and/or oxidisers.
- Vapour may travel a considerable distance to source of ignition.
- Combustion products include:
  Carbon dioxide (CO2)
  Other pyrolysis products typical of burning organic material.

Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions.

6. ACCIDENTIAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

See Section 8.

6.2 Environmental Precautions

See Section 12.

6.3 Methods and material for containment and cleaning up

Minor spills:
- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.

Major spills:
- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.

6.4 Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Safe handling:
Containers, even those that have been emptied, may contain explosive vapours.
Do NOT cut, drill, grind, weld or perform similar operations on or near containers.

Contains low boiling substance:
Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately.
- Check for bulging containers.
- Vent periodically.
- Always release caps or seals slowly to ensure slow dissipation of vapours.
- Avoid all personal contact. Including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- **DO NOT** allow clothing wet with material to stay in contact with skin.

Fire & explosion protection:
See Section 5.

Other information:
- Store in original containers in approved flame-proof area.
- No smoking, naked lights, heat or ignition sources.
- **DO NOT** store in pits, depressions, basements or areas where vapours may be trapped.

7.2 Conditions for safe storage, including any incompatibilities

Suitable container:
- Packing as supplied by manufacturer.
- Plastic containers may only be used if approved for flammable liquid.
- Check that containers are clearly labelled and free from leaks.
- For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure.
- For materials with a viscosity of at least 2680 cSt.

Storage incompatibility:
Methyl ethyl ketone:

- Reacts violently with strong oxidisers, aldehydes, nitric acid, perchloric acid, potassium tert-butoxide, oleum.
- Is incompatible with inorganic acids, aliphatic amines, ammonia, caustics, isocyanates, pyridines, chlorosulfonic aid.
- Forms unstable peroxides in storage, or on contact with propanol or hydrogen peroxide.
- Attacks some plastics.
- May generate electrostatic charges. Due to low conductivity, on flow or agitation.

Acetone:

- May react violently with chloroform, activated charcoal, aliphatic amines, bromine, bromine trifluoride, chlorotriazine, chromic(IV) acid, chromic(VI) acid, chromium trioxide, chromyl chloride, hexachloromelamine, iodine heptafluoride, iodoform, liquid oxygen, nitrosyl chloride, nitrosyl perchlorate, nitryl perchlorate, perchloromelamine, peroxomonosulfuric acid, platinum, potassium tert-butoxide, strong acids, sulfur dichloride, trichloromelamine, xenon tetrafluoride.
- Reacts violently with bromoform and chloroform in the presence of alkalies or in contact with alkaline surfaces.
- May form unstable and explosive peroxides in contact with strong oxidisers, fluorine, hydrogen peroxide (90%), sodium perchlorate, 2-methyl-1,3-butadiene.
- Can increase the explosive sensitivity of nitromethane on contact flow or agitation may generate electrostatic charges due to low conductivity.
- Dissolves or attacks most rubber, resins, and plastics (polyethylenes, polyester, vinyl ester, PVC, Neoprene, Viton).

Ketones in this group:

- Are reactive with many acids and bases liberating heat and flammable gases (e.g., H2).
- React with reducing agents such as hydrides, alkali metals, and nitrides to produce flammable gas (H2) and heat.
- Are incompatible with isocyanates, aldehydes, cyanides, peroxides, and anhydrides.
- Avoid strong bases.
- Avoid reaction with oxidising agents.

						
+	X	+	X	+	+	+

X - Must not be stored together.
O - May be stored together with specific preventions.
+ - May be stored together.

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

7.3 Specific end uses(s)

See Section 1.2.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
Acetone:	Dermal 186 mg/kg bw/day (Systemic, Chronic) Inhalation 1 210 mg/m³ (Systemic, Chronic) Inhalation 2 420 mg/m³ (Local, Acute) *Dermal 62 mg/kg bw/day (Systemic, Chronic) * Inhalation 200 mg/m³ (Systemic, Chronic) * Oral 62 mg/kg bw/day (Systemic, Chronic) **	10.6 mg/L (Water (Fresh)) 1.06 mg/L (Water - Intermittent release) 21 mg/L (Water (Marine)) 30.4 mg/kg sediment dw (Sediment (Fresh Water)) 3.04 mg/kg sediment dw (Sediment (Marine)) 29.5 mg/kg soil dw (Soil) 100 mg/L (STP)

Methyl Ethyl Ketone:	Dermal 1 161 mg/kg bw/day (Systemic, Chronic) Inhalation 600 mg/m³ (Systemic, Chronic) *Dermal 412 mg/kg bw/day (Systemic, Chronic) * Inhalation 106 mg/m³ (Systemic, Chronic) * Oral 31 mg/kg bw/day (Systemic, Chronic) **	55.8 mg/L (Water (Fresh)) 55.8 mg/L (Water - Intermittent release) 55.8 mg/L (Water (Marine)) 284.74 mg/kg sediment dw (Sediment (Fresh Water)) 284.7 mg/kg sediment dw (Sediment (Marine)) 22.5 mg/kg soil dw (Soil) 709 mg/L (STP) 1000 mg/kg food (Oral)

* Values for general population.

Occupational Exposure Limits (OEL):

Ingredient data:

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	Acetone	Acetone	500 ppm / 1210 mg/m3	Not available	Not available	Not available
UK Workplace Exposure Limits (WELs)	Acetone	Acetone	500 ppm / 1210 mg/m3	3620 mg/m3 / 1500 ppm	Not available	Not available
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	Methyl Ethyl Ketone	Butanone	200 ppm / 600 mg/m3	900 mg/m3 / 300 ppm	Not available	Not available
UK Workplace Exposure Limits (WELs)	Methyl Ethyl Ketone	Butan-2-One (Methyl Ethyl Ketone)	200 ppm / 600 mg/m3	899 mg/m3 / 300 ppm	Not available	Sk, BMGV

Emergency limits:

Ingredient	TEEL-1	TEEL-2	TEEL-3
Acetone	Not available	Not available	Not available
Methyl Ethyl Ketone	Not available	Not available	Not available

Ingredient	Original IDLH	Revised IDLH
Acetone	2,500 ppm	Not available
Methyl Ethyl Ketone	3,000 ppm	Not available

8.2 Exposure controls

8.2.1. Appropriate engineering Controls:	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk.
8.2.2. Personal protection:	
Eye and face protection:	Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.
Skin protection:	See Hand Protection below.

Hands/feet protection:	No special equipment needed when handling small quantities. OTHERWISE: For potentially moderate exposures: Wear general protective gloves, eg. light weight rubber gloves. For potentially heavy exposures: Wear chemical protective gloves, eg. PVC.
Body protection:	See Other Protection below.
Other protection:	No special equipment needed when handling small quantities. OTHERWISE: Overalls. PVC Apron. PVC protective suit may be required if exposure is severe. Some plastic personal protective equipment (PPE)(e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity. For large scale or continuous use, wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets). Non sparking safety or conductive footwear should be considered.

Recommended material(s):
GLOVE SELECTION INDEX.
Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".
The effect(s) of the following substance(s) are taken into account in the computer generated selection:
Alumasc PVC contact adhesive.

Material	CPI
BUTYL	A
PE/EVAL/PE	A
BUTYL/NEOPRENE	B
TEFLON	B
CPE	C
HYPALON	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
NITRILE+PVC	C
PVA	C
PVC	C
PVDC/PE/PVDC	C
SARANEX-23	C
SARANEX-23 2-PLY	C
VITON/NEOPRENE	C

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation.
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.
* The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
* Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used.

Respiratory protection:
Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Required minimum protection factor	Maximum gas/vapour concentration present in air p.p.m. (by volume)	Half-face Respirator	Full-Face Respirator
Upto 10	1000	AX-AUS / Class 1	-
Upto 50	1000	-	AX-AUS / Class 1
Upto 50	5000	Airline *	-
Upto 100	5000	-	AX-2
Upto 100	10000	-	AX-3
100+		-	Airline**

** - Continuous-flow or positive pressure demand.
A(All classes) = Organic vapours, B AUS or B1 = Acid gases, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB.
= Methyl bromide, AX = Low boiling point organic compounds(below 65 deg C).

8.2.3. Environmental exposure controls:

See Section 12.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Important health, safety and environmental information

Appearance:	Colourless		
Physical state:	Liquid	**Relative density (Water = 1):**	0.8-0.9
Odour:	Characteristic	**Partition coefficient n-octanol / water:**	Not available
Odour threshold:	Not available	**Auto-ignition temperature (°C):**	Not available
pH (as supplied):	Not available	**Decomposition temperature:**	Not available
Melting point / freezing point (°C):	Not available	**Viscosity (cSt):**	1947.040-2206.646 @ 20oC
Initial boiling point and boiling range (°C):	56	**Molecular weight (g/mol):**	Not available
Flash point (°C):	-18	**Taste:**	Not available
Evaporation rate:	Not available	**Explosive properties:**	Explosive under influence of flame
Flammability:	HIGHLY FLAMMABLE.	**Oxidising properties:**	Not available
Upper Explosive Limit (%):	13.0	**Surface Tension (dyn/cm or mN/m):**	Not available
Lower Explosive Limit (%):	2.6	**Volatile Component (%vol):**	Not available
Vapour pressure (kPa):	Not available	**Gas group:**	Not available
Solubility in water:	Partly miscible	**pH as a solution (not available%):**	Not available
Vapour density (Air = 1):	Not available	**VOC g/L:**	Not available
Nanoform Solubility:	Not available	**Nanoform Particle Characteristics:**	Not available
Particle Size:	Not available		

9.2 Other information

Not available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

See Section 7.2.

10.2 Chemical stability

Unstable in the presence of incompatible materials.
Product is considered stable.
Hazardous polymerization will not occur.

10.3 Possibility of hazardous reactions

See Section 7.2.

10.4 Conditions to avoid

See Section 7.2.

10.5 Incompatible materials

See Section 7.2.

10.6 Hazardous decomposition products

See Section 5.3

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Inhaled:	The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour may displace and replace air in breathing zone, acting as a simple asphyxiant. This may happen with little warning of overexposure. The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation. Acute exposure of humans to high concentrations of methyl ethyl ketone produces irritation to the eyes, nose and throat. Acute exposure by inhalation also causes nervous system depression, headache, and nausea. High vapour levels are easily detected due to odour, however odour fatigue may occur, with loss of warning of exposure. Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. Ketone vapours irritate the nose, throat and mucous membrane. High concentrations depress the central nervous system, causing headache, vertigo, poor concentration, sleep and failure of the heart and breathing. Effects of exposure to acetone by inhalation include central nervous system depression, light-headedness, unintelligible speech, in co-ordination, stupor, low blood pressure, fast heart rate, metabolic acidosis, high blood sugar and ketosis. Rarely, there may be convulsions and death of kidney tubules.
Ingestion:	The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733) Accidental ingestion of the material may be damaging to the health of the individual.

Skin Contact:	The material may accentuate any pre-existing dermatitis condition Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. In humans exposed to methyl ethyl ketone, skin inflammation has been reported. Animal testing has shown methyl ethyl ketone to have high acute toxicity from skin exposure. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. There is some evidence to suggest that the material may cause mild but significant inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.
Eye:	The liquid may produce eye discomfort and is capable of causing temporary impairment of vision and/or transient eye inflammation, ulceration There is evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Severe inflammation may be expected with pain.
Chronic:	Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects. Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Animal testing shows that methyl ethyl ketone may have slight effects on the nervous system, liver, kidney and respiratory system; there may also be developmental effects and an increase in birth defects. However, there is limited information available on the long-term effects of methyl ethyl ketone in humans, and no information is available on whether it causes developmental or reproductive toxicity or cancer. It is generally considered to have low toxicity, but it is often used in combination with other solvents, and the toxic effects of the mixture may be greater than with either solvent alone. Workers exposed to acetone for long periods showed inflammation of the airways, stomach and small bowel, attacks of giddiness and loss of strength. Exposure to acetone may enhance the liver toxicity of chlorinated solvents. Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following.

Alumasc PVC Contact Adhesive:	Toxicity Irritation - Not available.	
Acetone:	**Toxicity**	**Irritation**
	Dermal (rabbit) LD50: 20000 mg/kg[2]	Eye (human): 500 ppm - irritant
	Inhalation(Mouse) LC50; 44 mg/L4h[2]	Eye (rabbit): 20mg/24hr -moderate
	Oral (Rat) LD50; 5800 mg/kg[2]	Eye (rabbit): 3.95 mg - SEVERE
		Eye: adverse effect observed (irritating)[1]
		Skin (rabbit): 500 mg/24hr - mild
		Skin (rabbit):395mg (open) - mild
		Skin: no adverse effect observed (not irritating)[1]
Methyl Ethyl ketone:	**Toxicity**	**Irritation**
	Dermal (rabbit) LD50: 6480 mg/kg[2]	Eye (human): 350 ppm -irritant
	Inhalation(Mouse) LC50; 32 mg/L4h[2]	Eye (rabbit): 80 mg - irritant
	Oral (Rat) LD50; 2054 mg/kg[1]	Skin (rabbit): 402 mg/24 hr - mild
		Skin (rabbit):13.78mg/24 hr open
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances.	

Alumasc PVC Contact Adhesive & Methyl Ethyl Ketone:	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Methyl ethyl ketone is considered to have a low order of toxicity; however, methyl ethyl ketone is often used in combination with other solvents and the mixture may have greater toxicity than either solvent alone. Combinations of n-hexane with methyl ethyl ketone, and also methyl n-butyl ketone with methyl ethyl ketone may result in an increased in peripheral neuropathy, a progressive disorder of the nerves of the extremities. Combinations with chloroform also show an increase in toxicity.
Alumasc PVC Contact Adhesive & AcetoneL	For acetone: The acute toxicity of acetone is low. Acetone is not a skin irritant or sensitizer, but it removes fat from the skin, and it also irritates the eye. Animal testing shows acetone may cause macrocytic anaemia.
Acetone & Methyl Ethyl Ketone:	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

Acute Toxicity	✗	**Carcinogenicity**	✗
Skin Irritation/Corrosion	✗	**Reproductivity**	✗
Serious Eye Damage/Irritation	✓	**STOT - Single Exposure**	✓
Respiratory or Skin sensitisation	✗	**STOT - Repeated Exposure**	✗
Mutagenicity	✗	**Aspiration Hazard**	✗

Legend:
✗ - Data either not available or does not fill the criteria for classification.
✓ - Data available to make classification.

11.2.1. Endocrine Disruption Properties

Not available.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

	Endpoint	Test Duration (hr)	Species	Value	Source
Alumasc PVC Contact Adhesive:	Not available	Not available	Not available	Not available	Not available
Acetone:	NOEC(ECx)	12h	Fish	0.001mg/L	4
	LC50	96h	Fish	3744.6-5000.7mg/L	4
	EC50	48h	Crustacea	6098.4mg/L	5
	EC50	96h	Algae or other aquatic plants	9.873-27.684mg/l	4
Methyl Ethyl Ketone:	NOEC(ECx)	48h	Crustacea	68mg/l	2
	LC50	96h	Fish	>324mg/L	4
	EC50	72h	Algae or other aquatic plants	1972mg/l	2
	EC50	48h	Crustacea	308mg/l	2
	EC50	96h	Algae or other aquatic plants	>500mg/l	4

Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan). - Bioconcentration Data 8. Vendor Data.

For Methyl Ethyl Ketone:
log Kow: 0.26-0.69;
log Koc: 0.69;
Koc: 34;
Half-life (hr) air: 2.3;
Half-life (hr) H2O surface water: 72-288; Henry's atm m3 /mol: 1.05E-05;
BOD 5: 1.5-2.24, 46%;
COD: 2.2-2.31, 100%;
ThOD: 2.44;
BCF: 1.

Environmental fate:
Terrestrial fate - Measured Koc values of 29 and 34 were obtained for methyl ethyl ketone in silt loams. Methyl ethyl ketone is expected to have very high mobility in soil.

For Ketones:
Ketones, unless they are alpha, beta--unsaturated ketones, can be considered as narcosis or baseline toxicity compounds.

Aquatic fate:
Hydrolysis of ketones in water is thermodynamically favourable only for low molecular weight ketones. Reactions with water are reversible with no permanent change in the structure of the ketone substrate.

For Acetone:
log Kow : -0.24;
Half-life (hr) air : 312-1896;
Half-life (hr) H2O surface water : 20; Henry's atm m3 /mol : 3.67E-05 BOD 5: 0.31-1.76,46-55%
COD: 1.12-2.07
ThOD: 2.2BCF: 0.69.
Environmental Fate: The relatively long half-life allows acetone to be transported long distances from its emission source. Atmospheric Fate: Acetone preferentially locates in the air compartment when released to the environment.

DO NOT discharge into sewer or waterways.

12.2 Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Acetone	LOW (Half-life = 14 days)	MEDIUM (Half-life = 116.25 days)
Methyl Ethyl Ketone	LOW (Half-life = 14 days)	LOW (Half-life = 26.75 days)

12.3 Bioaccumulation potential

Ingredient	Bioaccumulation
Acetone	LOW (BCF = 0.69)
Methyl Ethyl ketone	LOW (LogKOW = 0.29)

12.4 Mobility in soil

Ingredient	Mobility
Acetone	HIGH (KOC = 1.981)
Methyl Ethyl ketone	MEDIUM (KOC = 3.827)

12.5 Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not available	Not available	Not available
PBT	✗	✗	✗
vPvB	✗	✗	✗

PBT Criteria fulfilled?	No
vPvB	No

12.6 Endocrine Disruption Properties

Not available.

12.7. Other adverse effects

Not available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product / packaging disposal:	DO NOT allow wash water from cleaning or process equipment to enter drains. It may be necessary to collect all wash water for treatment before disposal. In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. Recycle wherever possible. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material).
Waste treatment options:	Not available.
Sewage disposal options:	Not available.

14. TRANSPORT INFORMATION

Labels required:

Marine Pollutant: No.

Hazchem: -3YE.

Land transport (ADR):

14.1 UN number	1133
14.2 UN proper shipping name	Adhesives containing flammable liquid
14.3 Transport hazard class(es)	Class 3 Sub risk – Not applicable
14.4 Packing group	II
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user	33 Classification code F1 Hazard Label 3 Special provisions 640C; 640D Limited quantity 5 L Tunnel Restriction Code 2 (D/E)

Air transport (ICAO-IATA/DGR):

14.1 UN number	1133
14.2 UN proper shipping name	Adhesives containing flammable liquid
14.3 Transport hazard class(es)	ICAO/IATA Class 3 ICAO / IATA Subrisk Not applicable ERG Code 3L
14.4 Packing group	II
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user	Special provisions A3 Cargo Only Packing Instructions 364 Cargo Only Maximum Qty / Pack 60 L Passenger and Cargo Packing Instructions 353 Passenger and Cargo Maximum Qty / Pack 5 L Passenger and Cargo Limited Quantity Packing Instructions Y341 Passenger and Cargo Limited Maximum Qty / Pack 1 L

Sea transport (IMDG-Code/GGVSee):

14.1 UN number	1133
14.2 UN proper shipping name	Adhesives containing flammable liquid
14.3 Transport hazard class(es)	IMDG Class 3 IMDG Subrisk Not applicable
14.4 Packing group	II
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user	EMS Number F-E , S-D Special provisions Not applicable Limited Quantities 5 L

Inland waterways transport (ADN):

14.1 UN number	1133
14.2 UN proper shipping name	Adhesives containing flammable liquid
14.3 Transport hazard class(es)	3 – Not applicable
14.4 Packing Group	II
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user	Classification code F1 Special provisions 640C | 640D Limited quantity 5 L Equipment required PP, EX, A Fire cones number 1

14.7. Transport in bulk according to Annex II of MARPOL and the IBC code

Not applicable.

14.8. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
Acetone	Not available
Methyl Ethyl Ketone	Not available

14.9. Transport in bulk in accordance with the ICG Code

Product name	Ship Type
Acetone	Not available
Methyl Ethyl Ketone	Not available

15. REGULATORY INFORMATION

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

Acetone is found on the following regulatory lists:
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs).
EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.
Europe EC Inventory.
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS).
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI.

Methyl Ethyl Ketone is found on the following regulatory lists:
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs).
EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances.
EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.
Europe EC Inventory.
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS).
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI.

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

ECHA summary:

Ingredient	CAS number	Index No	ECHA Dossier
Acetone	67-64-1	606-001-00-8	Not available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Flam. Liq. 2; Eye Irrit. 2; STOT SE 3	GHS02; GHS07; Dgr	H225; H319; H336
2	Flam. Liq. 2; Eye Irrit. 2; STOT SE 3; Eye Irrit. 2A; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; Skin Irrit. 2; Aquatic Chronic 2	Dgr; GHS08; GHS01; GHS06; GHS09	H225; H319; H336; H371; H228; H315; H312; H335; H302; H332; H340; H317; H411
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

Ingredient	CAS number	Index No	ECHA Dossier
Methyl Ethyl ketone	78-93-3	606-002-00-3	Not available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Flam. Liq. 2; Eye Irrit. 2; STOT SE 3	GHS02; GHS07; Dgr	H225; H319; H336
2	Flam. Liq. 2; Eye Irrit. 2; STOT SE 3; Skin Irrit. 2; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; Eye Irrit. 2A; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3	Dgr; GHS08; GHS01	H225; H319; H336; H371; H335; H302; H312; H341; H361; H314
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (acetone; methyl ethyl ketone)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory. No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets).

16. OTHER INFORMATION

Revision Date: 24/01/2022.
Initial Date: 24/22/2019.

Full text Risk and Hazard codes:
H228 Flammable solid.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H340 May cause genetic defects.
H341 Suspected of causing genetic defects.
H361 Suspected of damaging fertility or the unborn child.
H371 May cause damage to organs.
H411 Toxic to aquatic life with long lasting effects.

SDS version summary:

Version	Date of Update	Section Updated
2.4	24/01/2022	Acute Health (eye), Acute Health (inhaled), Acute Health (skin), Acute Health (swallowed), Chronic Health, Classification, Exposure Standard, First Aid (skin), Ingredients, Personal Protection (Respirator), Physical Properties

Other information:
Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:
EN 166 Personal eye-protection
EN 340 Protective clothing
EN 374 Protective gloves against chemicals and micro-organisms
EN 13832 Footwear protecting against chemicals
EN 133 Respiratory protective devices

Definitions and abbreviations:
PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
ES: Exposure Standard
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index
AIIC: Australian Inventory of Industrial Chemicals
DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory.
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

The contents and format of this SDS are in accordance with EEC Commission Directive 1999/45/EC, 67/548/EC, 1272/2008/EC and EEC Commission Regulation 1907/2006/EC (REACH) Annex II.

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