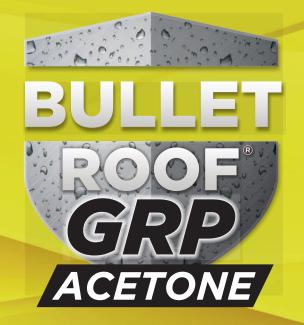


# MATERIALS SAFETY DATA SHEET



## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATON AND COMPANY

1.1 Product Identifier

Trade Names Bullet GRP Acetone

CAS Number 67-64-1 EINECS Number 200-662-2

REACH Registration Number 01-2119471330-49-XXXX

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

Besides its application as a solvent Acetone is an important intermediate of the chemical industry e.g. for manufacturing Methylmethacrylate, Methyl Isobutyl Ketone and Bisphenol A Identified Uses:

- 1. Manufacture, processing and distribution of substances and mixtures\*
- 2. Use in laboratories
- 3. Use in coatings
- 4. Use in binders and release agents
- 5. Rubber production and processing
- 6. Polymer manufacturing
- 7. Polymer processing
- 8. Use in Cleaning Agents
- 9. Use in Oil and Gas field drilling and production operations
- 10. Blowing agents
- 11. Mining chemicals
- \*Examples for processing:

Use as an intermediate, use as a moment etc., use as a solvent, use for manufacturing of resins.

1.3 Details of the supplier of the safety data sheet

Principal Building Products Ltd Babot Hall Industrial Estate,

Mangham Road, Rotherham, S61 4RJ

Tel: 01274 752643 Email: sales@bulletbp.co.uk

#### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

# Regulation 1272/2008 (GHS)

Flam. Liq. 2; H225 Highly flammable liquid and vapour STOT SE 3; H336 May cause drowsiness or dizziness

(EUH336) Repeated exposure may cause skin dryness or cracking

Eye Irrit. 2; H319 Causes serious eye irritation

EEC Directive 67/548 and subsequent amendments. Directive 1999/45/CE and its amendments

F; R11 Highly flammable
Xi; R36 Irritating to eyes

R66 Repeated exposure may cause skin dryness or cracking R67 Vapours may cause drowsiness and dizziness

2.2 Label elements Labelling (CLP)





Danger

Signal Word

Hazard Statements: H225 Highly flammable liquid and vapour H319 Causes serious eye irritation May cause drowsiness and dizziness

EUH066 Repeated exposure may cause skin dryness and cracking

Precautionary Statements P210 Keep away from heat/sparks/open flames/hot surfaces – no smoking

	P243	Take precautionary measures against static discharge
	P305+P351+338	IF IN EYES: Rinse cautiously with water for several minutes.
		Remove contact lenses, if present and easy to do so. Continue
		rinsing
	P403+P235	Store in a well ventilated place. Keep cool
	P405	Store locked up
S Phrase(s)	S2	Keep out of the reach of children
	S9	Keep container in a well ventilated place
	S16	Keep away from sources of ignition – No smoking
	S26	In case of contact with eyes, rinse immediately with plenty of water
		and seek medical advice

#### 2.3 Other hazards

Vapours are moderately irritating to the mucous membranes

Higher doses may have a narcotic effect. Danger of metabolic acidosis

After ingestion: Gastric and intestinal problems

Other symptoms: Headache, dizziness, nausea, unconsciousness

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### **Substances**

#### **Chemical characterisation (substance)**

- C3 H6 O = H3C-CO-CH3

- Acetone, Dimethyl ketone, 2-Propanone, Methyl ketone

CAS Number	EINECS Number	REACH registration number	RTECS No.	Customs Tariff No.
67-64-1	200-662-2	01-2119471990-49-XXXX	AL3150000	2914 11 00

## 4. FIRST AID MEASURES

## 4.1 Description of first aid measures

#### **General Advice**

Move victim to fresh air, put at rest and loosen restrict tive clothing. Do not allow victim to become chilled. Keep victim warm

If victim is at risk of losing consciousness, position and transport on their side. Call a physician immediately

#### Inhalation

Move victim to fresh air, put at rest and loosen restrictive clothing.

If breathing becomes irregular or ceases, apply mouth to mouth resuscitation or artificial respiration immediately, where required supply oxygen. Immediately get medical attention

#### Skin contact

Immediately remove any wetted clothing, shoes or stockings. After contact with skin, wash immediately with soap and plenty of water. Then cream your skin. In case of skin irritation, consult a physician

#### Eve contact

Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently seek the immediate attention of an ophthalmologist

## Ingestion

If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label Give activated carbon, in order to reduce the resorption in the gastro-enteric tract

# 4.2 Most import symptoms and effects, both acute and delayed

No information available

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

Combat acidosis. Monitor alkali reserves. Monitor breathing

If breathing becomes irregular or ceases, apply mouth to mouth resuscitation or artificial respiration immediately, where required supply oxygen

Attention: several hours latency period. In severe cases, pneumonia or a pulmonary oedema may develop

## 5. FIRE FIGHTING MEASURES

#### 5.1 Extinguishing Media

Suitable extinguishing media: Extinguishing powder, alcohol resistant foam, carbon dioxide, water fog

Unsuitable extinguishing media: Full water jet

## 5.2 Special hazards arising from the substance or mixture

Highly flammable

Explosive mixtures with air may even form at room temperature. Beware of reignition.

In case of fire may be liberated: Carbon monoxide and carbon dioxide

#### 5.3 Advice for fire-fighters

**Special protective equipment for fire-fighters:** Wear a self contained breathing apparatus and chemical protective clothing

Additional information: Hazchem-Code: 2YE

Do not expose to high temperature. Danger of bursting or explosion. Use fine water spray

to cool endangered containers

Move undamaged containers from immediate hazard area if it can be done safely

Do not allow fire water to penetrate into surface or ground water

Fire residuals and contaminated extinguishing water must be disposed of in accordance with

the regulations of the local authorities Temperature class: T1 (DIN 57165) Gas class: II A (DIN 57165)

Fire class: B

Mixtures with 4% acetone mixed with 96% water still have a flash point of 54°C

## 6. ACCIDENTAL RELEASE MEASURES

# 6.1 Personal precautions, protective equipment and emergency procedures

Remove persons not involved upwind

Wear a self contained breathing apparatus and chemical protective clothing. Solvent resistant protective clothing recommended

## **6.2** Environmental precautions

Plug leaks if safely possible

Do not allow to enter drains, surface waters, basements or pits

When released into the environment, alert police and fire brigade

Seal all low level rooms. Danger of explosion!

## 6.3 Methods and material for containment and cleaning up

In case of spill of large quantities: Dam spills and pump to remove. Explosion protection required

Absorb leftover product with non-flammable liquid-binding material (e.g. earth, sand, vermiculite or ground sand stone) and place in closed containers for disposal

Flowing water: Dilution occurs quickly. In case of large spills/leaks inform appropriate local, state and federal spill reporting authorities

Standing water: Seal off. Remove all sources of ignition

Additional information: Remove all sources of ignition. Vapours spread at floor level. Cover drainage holes and evacuate basement. Dilute with plenty of water. Use only explosion protected equipment/instruments

Liquid: Very highly flammable. Liquid evaporate very quickly

Vapours: Very highly flammable

Vapours form potentially explosive mixtures with air. Heavier than air, they proceed at floor level and may backflash over great distances when ignited. Ignition by hot surfaces, sparks and open flames

Solubility in water: Complete

Mixtures with 4% acetone mixed with 96% water still have a flash point of 54°C. In case of important spills, risk of ignition of the acetone-water mixture. Potentially explosive mixtures with air may form above water surface

### 6.4 Reference to other sections

Not required

## 7. HANDLING AND STORAGE

## 7.1 Precautions for safe handling

Precautions against fire and explosion:

Provide adequate ventilation, and local exhaust as needed

Provide room air exhaust at ground level. Concentrated vapours are heavier than air.

Avoid the formation of aerosol. Do not breathe vapours.

Use only explosion-protected equipment/instruments. Do not use air pressure

Precautions against fire and explosion:

Exposure to temperatures exceeding 50°C will increase pressure: resulting in danger of bursting or explosion

Keep away from sources of ignition – No smoking

Take precautionary measures against static discharges. Beware of reignition

Potentially explosive mixture may form within partially empty containers

Emergency cooling must be provided for in case of a fire in the vicinity

Do not weld

# 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Keep container dry. Keep container tightly closed in a cool, well ventilated place. Protect from direct sunlight

Steel, stainless steel, and aluminium are stable container materials. Copper may be attacked

Unsuitable container/equipment material: May attack plastics

Hints on joint storage:

Do not store together with combustible or self-igniting materials or any highly flammable solids

Peroxides may form when product is exposed to light and air

Potentially explosive mixture may form within partially empty containers

For outdoor storage: Use only equipment approved for use in 1 zone

For indoor storage: Use only equipment approved for use in 2 zone

Storage class: 3 = Flammable liquids

#### 7.3 Specific end use(s)

Solvent

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### **8.1** Control parameters

Туре	Limit Value
Europe, IOELV: TWA	1210 mg/m <sup>3</sup> ; 500 ppm
Great Britain: WEL-TWA	1210 mg/m <sup>3</sup> ; 500 ppm
Great Britain: WEL-STEL	3620 mg/m <sup>3</sup> ; 1500 ppm

#### Contains no substances with occupational exposure limits

#### DN(M)EL/PNEC

## DN(M)EL's

End User	Exposure Time	Route of entry	Value
Workers	Long term	Dermal	186 mg/kg bw/d
Workers	Short term	Inhalative	2420 mg/m <sup>3</sup>
Workers	Long term	Inhalative	$1210 \text{ mg/m}^3$
Consumers	Long term	Oral	62 mg/kg bw/d
Consumers	Long term	Dermal	62 mg/kg bw/d
Consumers	Long term	Inhalative	$200 \text{ mg/m}^3$

## Predicted No Effect Concentrations (PNEC): butan-1-ol; n-butanol

PNECwater (freshwater) = 10.6 mg/l

PNECwater (marine water) = 1.06 mg/l

PNECwater (intermittent release) = 21 mg/l

PNECsediment(freshwater) = 30.4 mg/kg dwt

PNECsediment (marine water) = 3.04 mg/kg dwt

PNECsoil = 0.112 mg/kg dwt

PNECsewage treatment plant = 29.5 mg/l

## 8.2 Exposure controls

Explosion protection required. Provide good ventilation and/or an exhaust system in the work area

#### Occupational exposure controls

All information for relevant exposure scenarios including operation conditions and risk management measures are listed in 'Annex II: Worker Exposure and Risk Assessment

## **Respiratory protection**

For short exposures or in case of accident: Filter apparatus, type AX (EN 371)

## Hand protection

Protective gloves according to EN 374

#### Gloves material

Butyl caoutchouc (butyl rubber) – Laver thickness >= 0.5mm. Breakthrough time: >480 min

Observe glove manufacturer's instructions concerning penetrability and breakthrough time

# Eye protection

Tightly sealed safety glasses according to EN 166

#### Skin protection

Use solvent resistant protective clothing

Recommendation: Flame retardant protective clothing, anti-static safety shoes according to EN 345 - 347

# General protection and hygiene measures

All information for relevant exposure scenarios including operational conditions and risk management measures are listed in 'Annex II: Consumer Exposure and Risk Assessment'

#### **Protective Measures**

General industrial hygiene practice

#### **Environmental exposure controls**

All information for relevant exposure scenarios including operational conditions and risk management measures are listed in 'Annex II: Environmental Exposure and Risk Assessment' and Annex IV: Environmental Exposure Calculation Tool'

## 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and ch	nemical properties
Appearance	Liquid
Colour	Colourless, clear
Odour	Sweet aromatic
pH in water solution	at 10 g/l: neutral' 50% in H2O: 5 - 6
Boiling point/boiling range	56.06°C
Melting point/melting range	-94.7°C
Flash point	-17°C (c.c.)
Ignition temperature	465°C
Lower explosion limit	2.50 vol %
Upper explosion limit	14.30 vol %
Refraction index	at 20°C: 1.358 – 1.359
Vapour pressure	at 20°C: 240 hPa
	at 50°C: 800 hPa
Density	at 20°C: 0.79 g/ml
Solubility	at 20°C: in organic solvents 100%
Water solubility	at 20°C: multimiscible
Partition coefficient n-octanol/water	$-0.24 \log P(o/w)$
	Bio-accumulation is not to be expected (log $P(o/w) \le 1$ )
Viscosity, dynamic	At 20°C: 0.32 mPa*s
9.2 Other information	
Molecular weight	58.09 g/mol
Odour threshold	$47.5 \text{ mg/m}^3$
Relative vapour density at20°C (Air=1)	2.1
Dissociation constant	24.2 pKa at 25°C
Evaporation rate	2.0  (ether = 1)
Evaporation rate	5.6  (BuAc = 1)
Saturation concentration at 20°C	$550 \text{ g/m}^3$

## 10. STABILITY AND REACTIVITY

## 10.1 Reactivity

Acetones react in presence of bases

#### 10.2 Chemical stability

Vapours form potentially explosive mixtures with air. Heavier than air, they proceed at floor level and may back flash over great distances when ignited. May become electro-statically charged

## 10.3 Possibility of hazardous reactions

No hazardous reactions known

## 10.4 Conditions to avoid

Highly flammable. Concentrated vapours are heavier than air

Forms an explosive mixture with air, also in empty, uncleaned containers

May produce, when being mixed with chloridised hydrocarbons and exposed to light, strongly irritating chloric acetone

## 10.5 Incompatible materials

Attacks many plastics and rubbers. On contact with barium hydroxide, sodium hydroxide and many other alkaline materials condensation may occur

Avoid contact with strong oxidising agents, alkalis and amines

## 10.6 Hazardous decomposition products

In case of fire may be liberated: Carbon monoxide and carbon dioxide

## 11. TOXICOLOGICAL INFORMATION

## 11.1 Information on toxicological effects

#### **Acute Oral Toxicity**

LD50 Rat 5800 mg/kg bw (OECD 401)

#### **Acute Dermal Toxicity**

LD50 Rat >15800 mg/kg bw

## **Acute Inhalative Toxicity**

LC50 Rat 76 mg/L/4h

#### After inhalation

Vapours may cause drowsiness and dizziness

For the development of any overt signs of toxicity in humans, accidental exposures to extremely large amounts of acetone by inhalation and vapour or ingestion of liquid are necessary (e.g. several thousand ppm of acetone vapour)

## After swallowing

Gastric and intestinal problems

#### In case of skin contact

Irritant. Repeated exposure may cause skin dryness or cracking

Repeated exposure may cause skin dryness or cracking, due to defatting properties

No indication for sensitising properties in humans

#### In case of eye contact

**Irritant** 

Specific symptoms in animal studies (rabbit): irritant (OECD 405)

#### General remarks

Mutagenicity:

Not mutagenic in bacterial mutagenicity (OECD 471)

Chromosomal aberrations, in-vitro (OECD 473): negative

Gene-mutations mammalian cells, in-vitro (OECD 476): negative

Micronucleus test in-vivo mouse/hamster (non-guideline):negative

Carcinogenicity:

Not carcinogen at long term exposure (mouse, dermal)

Reproductive toxicity:

Effects on fertility:

No impairment of reproductive performance in animal experiments

Developmental toxicity:

None developmental toxicity (inhalation in rat, mouse, OECD 414)

Other symptoms:

Burning eyes and skin, fatigue, nausea, unconsciousness

No known chronic effects, mild skin resorption Short term effect: 10000 ppm were well tolerated No symptoms did appear after 30 to 60 minutes

## **Further information**

No data available

## 12. ECOLOGICAL INFORMATION

## 12.1 Toxicity

Aquatic toxicity: Acute effects:

Fish toxicity:

Freshwater species: 96h LC50 (Oncorhynchus mykiss): 5540 mg/l Marine species: 96h LC50 (Alburnus alburnus (laburnum)): 11000 mg/l

Invertebrate toxicity:

Freshwater species: 48h EC50 (Daphnia pulux (water flea)): 8800 mg/l

Marine species: 24h EC50 (Artemisia salina): 2100 mg/l

Algae toxicity:

Freshwater species: 8h NOEC (Microcystis aeruginosa): 530 mg/L/8 d Marine species: 96h NOEC (Prorocentrum minimum): 430 mg/l

Bacterial toxicity:

EC12: (30 min activated sludge; OECD 209): 1000 mg/l

Long term effects:

Long term toxicity to aquatic invertebrates:

28 day NOEC (Daphnia pulex (water flea); reproduction: 2212 mg/l No information on longer term effects of fish and algae available

Long term effects on aquatic organisms are not relevant due to the rapid elimination of in water

Water hazard class: 1 = slightly hazardous to water (WGK catalogue number 6)

#### 12.2 Persistence and degradability

Further details:

Abiotic degradation:

DT50, 19-114 d (Air, indirect photodegradation by reaction with OH radicals)

Abiotic degradation: none (Water, hydrolysis)

Biodegradation:

91%/28d (OECD 301B)

ThOD 84%/5d (BOD5, APHA 219)

COD: 2.21 gO2/g

Product is readily biodegradable

Effects on sewage plant:

In activated sludge: 100%/4d (anaerobic conditions; Warburg Respirometer)

## 12.3 Bio accumulative potential

Bioconcentration factor (BCF): 3 (calculated, BCFWIN v2.17)

#### 12.4 Mobility in soil

Adsorption coefficient soil (Kd): 1.5 L/kg at 20oC

The soil sorption coefficient indicates that acetone is mobile in soil and may be transported by soil water

Volatility:

Henry constant: 2929 – 3070 Pa\*m3/mol (25oC in water) Henry constant: 3311 Pa\*m3/mol (25oC marine water)

Experimentally determined Henry's Law constants indicate a moderate volatility from water

#### 12.5 Results of PBT and vPvB assessment

This substance does not meet the PBHT/vPvB criteria of REACH, annex XIII

## 12.6 Other adverse effects

General information: Terrestrial toxicity: 48h LD50 (Eisenia fetida): 0.1 – 1 µg/cm3

48h LD50 (Ambystoma mexicanum): 20000 mg/l

48h LD50 (Xenopus laevis): 24000 mg/l

In a study conducted according to OECD Guideline 207 (Earthworm, Acute Toxicity Tests: filter paper contact test), acetone showed a moderate toxicity to Eisenia fetida. In further short term toxicity studies, Ambystoma mexicanum and Xenopus laevis larvae exposed to acetone under static conditions in covered glass basins showed 48h LC50 values of 20,000 mg/l and 24,000 mg/l respectively

Do not allow to enter into ground water, surface water or drains

#### 13. DISPOSAL CONSIDERATIONS

## 13.1 Waste treatment methods

Product

Waste key number: 070104\* =

Wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals: organic solvents,

halogen free. \* = Evidence for disposal must be provided

Recommendation:

Incinerate as hazardous waste according to applicable local, state, and federal regulations. Do not dispose of with

household waste

Contaminated packaging

Recommendation:

Dispose of waste according to applicable legislation

Handle contaminated packages in the same way as the substance itself

Non-contaminated packages may be recycled

# 14. TRANSPORT INFORMATION

14.1 UN Number	
ADR	1090
IMDG	1090
IATA	1090
14.2 Proper Shipping Name	
ADR	UN 1090, ACETONE
IMDG	ACETONE
IATA	ACETONE
14.3 Transport hazard class	
ADR	Class 3, Code: F1
IMDG	Class 3 Code –
IATA	Class 3

14.4 Packing group		
ADR	II	
IMDG	II	
IATA	II	
14.5 Environmental		
Marine pollutant	No	
14.6 Special precautions for users		
Land transport (ADR/RID)		
Warning board	ADR/RID: Kemler number 33, UN number 1090	
Hazard label	3	
Limited quantities	LQ4	
EQ	E2	
Contaminated packaging: Instructions	P001 IBC 02 R001	
Special provisions for packing together	MP19	
Portable tanks: Instructions	T4	
Portable tanks: Special instructions	TP1	
Tank coding:	LGBF	
Tunnel restriction code:	D/E	
Sea Transport (IMDG)		
EmS:	F-E, S-D	
Special provisions	-	
Limited quantities	1L	
EQ	E2	
Contaminated packaging: Instructions	P001	
Contaminated packaging: Provisions	-	
IBC: Instructions	IBC02	
IBC: Provisions	-	
Tank instructions: IMO	T3	
Tank instructions: UN	T4	
Tank instructions: Provisions	TP1	
Stowage and segregation	Category E	
Properties and observations	Colourless, clear liquid with a characteristic mint-like odour.	
	Flashpoint: -20°C18°C c.c. Explosive limits: 2.5% to 13%	
	Miscible with water	
Air Transport (IATA)		
Hazard	Flamm. Liquid	
EQ	E2	
Passenger Ltd Qty	Y305 – maximum quantity: 1 L	
Passenger	305 – maximum quantity: 5 L	
Cargo	307 – maximum quantity: 60 L	
ERG	3H	
14.7 Transport in bulk according to Anney II of MARPOL 73/78 and the IRC Code		

## 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available

# 15. REGULATORY INFORMATION

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

National regulations – Great Britain Hazchem Code: 2YE

National regulations – Germany

Storage Class: 3 = Flammable liquids

Water Hazard Class: 1 = Slightly hazardous to water (WGK catalogue number 6)

Incident Regulation: nr. 7b Information on working limitations:

Observe employment restrictions concerning young persons Observe employment restrictions for expectant or nursing mothers

National regulations – Switzerland Volatile organic compounds (VOC):

100% by weight = 790 g/l

Further regulations, limitations and legal requirements:

According to Positive list of volatile organic compounds (VOC), version 8.10.2002,

Dok, 814.018)

National regulations – EC member states

Volatile organic compounds (VOC):

100% by weight = 790 g/l

National regulations – USA TSCA Inventory – Listed

TSCA HPVC: not listed

Clean Air Act:

SOCMI Chemical: yes Other Environ mental Laws: CERCLA: RQ 5000 lbs

RCRA Hazardous Wastes: Code U002

RCRA Groundwater Monitoring: Methods 8240/PQL 100

NIOSH Recommendations:

Occupational Health Guideline: 0004\*

Hazard Rating Systems NFPA Hazard Rating: Health: 1 (Slight) Fire: 3 (Serious) Reactivity: 0 (Minimal) HMIS Version III Rating: Health: 1 (Slight)

Flammability: 3 (Serious)
Physical Hazard: 0 (Minimal)

Personal Protection: X = consult your supervisor

National Regulations - Canada

CAS 67-1 is listed on Canada's DSL and Ingredient Disclosure Lists

Classification: B2, D2B National regulations – Japan

MITI: 2-542

## 15.2 Chemical safety assessment

For this substance a chemical safety assessment has been carried out

## 16. OTHER INFORMATION

Further remarks

Literature: REACH Registration Dossier Acetone. P & D-REACH Consortium, 2010

## Source of key data used to compile the data sheet

Supplier information

## **Modifications from last revision**

All sections revised according to CLP/GHS requirements

**Date:** 31/12/10

## **Notes**

Bullet Roof GRP ACETONE complies with the following standards:

European Pharmacopoeia British Standard BS 509:1987 American Standard ASTM D329-86 German Standard DIN 53247

#### **Exclusion of Liability**

Information contained in this publication is accurate to the best of the knowledge and belief of Principal Building Products.

Any information or advice obtained from Bullet Building Products Ltd otherwise than by means of this publication and whether relating to the Principal Building Products materials or other materials, is also given in good faith. However, it remains at all times the responsibility of the customer to ensure that Bullet Building Products materials are suitable for the particular purpose intended.

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A Material Safety Data Sheet has been issued describing the health, safety and environmental properties of this product, identifying the potential hazards and giving advice on the handling precautions and emergency procedures. This must be consulted fully before handling, storage and use.