

MATERIAL SAFETY DATA SHEET

according to EU Directive 93/112/EC

EXPANDING FOAM

Version: 2

Print date: 24.5.04

**1. Identification of Substance/Preparation and Company**

Product Name Gun grade Expanding foam
Company Biokil Crown Ltd
7 Stadium Ind Park, Long Eaton
Nottingham, NG10 2DD
Telephone 0115 946 0060
Fax 0115 946 9767
Emergency Telephone 07967 10 71 95

2. Composition / Information on ingredients

Chemical Characterization: Polyurethane foam based on polyurethane prepolymer.
Propellant: propane/butane mixture and dimethylether

Hazardous ingredients:

NAME	CAS	Weight-%	Danger Symbol	Risk Phrases
Diphenylmethane-4,4-diisocyanate	9016-87-9	30-60	Xn	20-36/37/38-42/43
Mixture of propane (propellant)	74-98-6			12
Butane (propellant)	106-97-8	1-5		12
Dimethylether (propellant)	115-10-6	1-5		12

3. Hazards identification

Potential health affects : Contains diphenylmethane-4,4-diisocyanate. Harmful by inhalation, swallowing and skin contact. Irritating to eyes, respiratory system and skin. May cause sensitization by inhalation and skin contact. In case of very sensitive persons low concentrations can cause asthmatic reactions. During use formation of explosive vapour-oxygen mixtures are possible especially on the ground.

4. First aid measures

Eyes: In case of contact flush eyes immediately with plenty of water for at least 15 minutes. Lift eyelids and rinse well underneath them. Get medical attention if irritation persists.
Mouth (ingestion): Rinse mouth with water several times. Consult a physician and show this safety data sheet.
Lungs (inhalation): Fresh air and rest. Get medical attention if complaint persists.
Skin: Remove completely with a dry cloth or paper towel, before washing with detergent and water. Get medical attention if irritation persists.
Clothes: Remove polluted clothing.

5. Fire fighting measures

Suitable extinguishing media CO₂, powder, foam and water spray.
unsuitable extinguishing media Water beam.
special fire fighting procedures Wear protective clothing and breathing apparatus. Remove unexposed containers from the danger area. Cool with water, container may burst.

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**6. Accidental release measures**

Environmental precautions	Keep away from drains and watercourses.
Clean up procedures	Wipe, scrape or soak up in inert material and put in a container for disposal
Personal precautions	Wear proper protective equipment as described in the "eye and skin protection" section of chapter 8.

7. Handling and storage

handling	Handle in well-ventilated area. Avoid contact with skin, eyes and do not swallow.
Storage	Store in closed packing between 5C and 25C away from direct sunlight and other sources of heat.

8. Exposure controls / personal protection

Occupational exposure limit	MAC-TLV propane/butane: 1000 ppm, dimethylether: 1000 ppm. MAC-TLV-diphenylmethane-4,4-diisocyanate: 0,005 ppm.
Respiratory protection	Avoid breathing the vapor. Maintain good ventilation.
Eye and skin protection	Avoid contact with skin and eyes. Wear safety glasses.
Industrial hygiene	When using do not eat, drink or smoke. Wash hands after work and before breaks. Do not rub eyes with dirty hands.

9. Physical and chemical properties

Physical state	aerosol	flash point	NA	C
colour	yellow	lower explosion limit	NA	vol-%
Odor	odorless	upper explosion limit	NA	vol-%
Density (water=1)	NA g/ml	ignition temperature	>300	C
Ph (water=7)	NA	vapor pressure (20c)	5,5	bar
Boiling point (water=100)	NA C	mixable with water	no	
Freezing point (water=0)	NA C	mixable with organic solvents	unknown	
VOC-content (container)	750ml: 98,6g			

10. Stability and reactivity

Hazardous decomposition products	None at appropriate use.
Materials to avoid	Unknown
Conditions to avoid	Keep away from sources of ignition. Container may burst when heated.

11. Toxicological information

Product information	MDI	Butane	Dimethylether
Acute oral LD50 (mg/kg)	10000	unknown	unknown (rat)
Acute dermal LD50 (mg/kg)	unknown	unknown	unknown
Acute inhalation LC50 (mg/kg)	unknown	658	386 (rabbit)
Other information :			
For information on hazardous substances see "chapter" 2.			

12. Ecological information

Avoid uncured product will come in the environment	
Degradability	unknown
Ecotoxicity	unknown
WGK	1 (self-assessment)

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**13. Disposal considerations**

Dispose in accordance with federal, state and local environment.

Waste code empty cans (Germany) 15 01 99D1

Waste code cured product (Germany) 20 01 06

14. Transport information

By sea according GGVsee/IMDG-Code

Class: 2.2, page 2102, ems: 2-13, MFAG: 370

By land according RID/ADR/GGVS/GGVE

Class 2, letter:5A

By air according ICAO/IATA-DGR

Class 2.2, packing group: II, Pkg-Notes: Pass. 203/75 kg, cargo: 203/150 kg

UN-number

1950

Proper shipping name

Aerosols

15. Regulatory information**Read the Label before purchase and use.**

This product is not subject to the labelling requirements of ec directives 67/548/ec and 88/379/ec as amended.

Danger symbol

F,Xn

Contains

Diphenylmethane-4,4-diisocyanate, isomers and homologues.

R-phrases

12-20-36/37/38-42/43

S-phrases

2-26-28-38-45

Pressurized container. Protect from sunlight and do not expose to temperature exceeding 50 C

Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking. Keep out of reach of children. In use, may form flammable/explosive vapor-air mixture.

16. Other Information

This product safety data sheet confirms to Ec directive 91/155/EEC as well as its amendments.

This data is offered in good faith as typical values and not as product specifications. No warranty either expressed or implied, is hereby made. The recommended industrial and safe handling procedures are believed to be generally applicable, each user should review the recommendations in the specific the intended use and determined whether they are appropriate.

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1. Identification of Substance/Preparation and Company

Product Name Hand Held Expanding Foam
Company Biokil Crown Ltd
7 Stadium Ind Park, Long Eaton
Nottingham, NG10 2DD
Telephone 0115 946 0060
Fax 0115 946 9767
Emergency Telephone 07967 10 71 95

2. Composition / Information on ingredients

Chemical characterisation: MDI based prepolymer in an aerosol tin with flammable propellant.

Hazardous substances	CAS nr.	Weight-%	Symbol	R-phrases
Diphenylmethane-4,4'diisocyanate	9016-87-9	30-60	"Xn"	20-36/37/38-42
Mixture of n-Butane (propellant) and Propane (propellant)	106-97-8		"F+"	12
R 134a (propellant)	74-56-6	1-15	"F+"	12
	811-97-2	1-15	NA	NA

Exposure limits in various countries have to be taken into account.

3. Hazards identification

Potential health effects: When heated container can burst. When temperature is rising the pressure within the tin increases. Harmful by inhalation. Irritating to eyes, respiratory system and skin. After curing the product is harmless. The formulation contains a certain amount of propellant which is heavier as air.

4. First aid measures

Ingestion: Consult a physician and show this Material Safety Data Sheet.
Skin: Remove completely with a dry cloth or paper towel, before washing with detergent and water. Get medical attention if complaint persists.
Inhalation: Fresh air and rest. Get medical attention if complaint persists.
Eyes: In case of contact flush eyes immediately with plenty of water for at least 15 minutes. Lift eyelids and rinse well underneath them. Get medical attention if complaint persists.
Further: Remove polluted clothing.

5. Fire fighting measures

Extinguishing media: Water spray, powder and foam.
NOT to be used : CO₂.
Special firefighting procedures: Wear protective clothing and breathing apparatus.

6. Accidental release measures

Wear proper protective equipment as described in the 'personal protection' section of chapter 8.
Avoid the product will come in the environment.
Wipe, scrape or soak up in inert material and put in a container for disposal.

7. Handling and storage

Technical protective measures: Store dry in closed packing between 5 C (41 F) and 25 C (77 F).
Handle in well ventilated area.
Personal protective measures: Eye- and skin protection.
Fire- and explosion measures: Keep away from sources of ignition.

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**8. Exposure controls / personal protection**

Technical protective measures: Zie punt 7.
 Industrial hygiene: - When using do not eat, drink or smoke.
 - Wash hands after work and before breaks.
 - Don't rub eyes with dirty hands.

- Eye protection : safety glasses.
 - Hand protection : rubber gloves.
 - Inhalation : use in well ventilated areas.
 - Skin protection : well fitting clothing.

9. Physical and chemical properties

Physical state: aerosol
 Color: yellow
 Odor: amine like
 Density (water = 1): 1,1 g/ml
 pH (water = 7): NA
 Boiling point: NA C NA F
 Freezing point: NA C NA F
 Flash point: <0 C <32 F
 Lower explosion limit: 4 vol-%
 Upper explosion limit: 9 vol-%
 Ignition temperature: NA C NA F
 Vapor pressure: NA mbar
 Solubility in water (25 C): insoluble
 Solubility in toluene (25 C): soluble

10. Stability and reactivity

Hazardous decomposition products: In case of fire hydrogenhalogenides, nitrogen/phosphates and organic crack products can arise.
 Materials to avoid: Unknown
 Conditions to avoid : Keep away from sources of ignition.

11. Toxicological information

Product information :	MDI	n-Butane	Propane
Acute oral LD50 (mg/kg) :	10000	unknown	unknown (mouse, 1996)
Acute dermal LD50 (mg/kg) :	unknown	unknown	unknown
Acute inhalation LC50 (mg/l) :	unknown	658	unknown (mouse, 1996)
MAC-value (ppm) :	0,005	600	unknown (Dutch Chemicalkaarten, 10 ^e edition, 1994/1995)

Other information : May cause sensitization by inhalation.

For information on hazardous substances see 'chapter 2'.

12. Ecological information

Avoid uncured product will come in the environment.

Ecotoxicological information: unknown

WGK: 2 (self classification)

13. Disposal considerations

Disposal as waste matter: dispose in accordance with federal, state and local legislation.

14. Transport information

By sea according GGVSee/IMGD-Code: Class 2.1, EmS: 2-13, MFAG: 620, label: 3
 By land according RID/ADR/GGVS/GGVE: Class 2, letter: 5F, Danger map: 20G53, label: 3.
 By air according ICAO/IATA-DGR: Class 2.1, Cargo: 203, Passenger: 203, Packing group: II.
 UN-number: 1950
 Further information: Shipping name: 'Aerosols'.

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**15. Regulatory information**

This product is not subject to the labeling requirements of EC Directives 67/548/EEC and 88/379/EEC as amended.

Danger symbol: "Xn" (harmful), "F+" (extremely flammable)

Contains: Diphenylmethane-4,4'diisocyanate.

R-phrases: 12-20-36/37/38-42

S-phrases: 2-26-28-38-45.

16. Other Information

This data is offered in good faith as typical values and not as a product specification. No warranty either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable, each user should review the recommendations in the specific context of the intended use and determine whether they are appropriate.

NA: not applicable.
TSC: trade secret component.