

Material Safety Data Sheet

K-PAK Thermal Design Foam



1. Identification of the material and supplier

Names

- Product name** : K-PAK Thermal Design Foam
- Distributor** : SABRE CORPORATION
75 South Creek Road
Dee Why, NSW 2099
Australia
Phone: 02-9982-0100
- Manufacturer** : Zotos International, INC.
100 Tokeneke Road,
Darien, CT 06820
www.zotos.com
- Emergency telephone number** : 131126

2. Hazards identification

- Classification** : Not regulated.
- Risk phrases** : Not classified.
- Statement of hazardous/dangerous nature** : NON-HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED. Additional information on toxicological endpoints is available from the supplier upon request

3. Composition/information on ingredients

- Mixture** : Yes.

Ingredient name	CAS number	Concentration
butane	106-97-8	3.45
propane	74-98-6	2.55
(R)-p-mentha-1,8-diene	5989-27-5	0.00885

Other ingredients, determined not to be hazardous according to Safe Work Australia criteria, and not dangerous according to the ADG Code, make up the product concentration to 100%.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

First aid measures

- Inhalation** : Move affected person to fresh air.
- Ingestion** : NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED. Treat symptomatically. Never give anything by mouth to an unconscious person. Call a physician.
- Skin contact** : Remove contaminated clothing and shoes. Wash with plenty of soap and water.
- Eye contact** : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Seek medical attention if irritation persists.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.
- Advice to doctor** : None.

5. Fire-fighting measures

- Extinguishing media** : Use dry chemical, CO₂, alcohol-resistant foam or water spray (fog).
- Special exposure hazards** : Flammable liquid. Prevent the creation of flammable or explosive concentrations of vapors in air and avoid vapor concentrations higher than the occupational exposure limits.
- Hazardous thermal decomposition products** : may be released including hydrofluoric and/or carbonyl halides
- Special protective equipment for fire-fighters** : Immediately contact emergency personnel. Flammable material. In case of insufficient ventilation, wear suitable respiratory equipment.
- Hazchem code** : 2YE

6. Accidental release measures

- Personal precautions** : Flammable. Keep away from ignition sources such as heat/sparks/open flame. - No smoking. Do not get in eyes. Keep out of reach of children.
- Environmental precautions** : Leaking packages should be placed in open containers outdoors away from any source of ignition
- Methods for cleaning up** : Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Place spilled material in an appropriate container for disposal. After contact with skin, wash immediately with plenty of water.

7. Handling and storage

- Handling** : Keep away from ignition sources such as heat/sparks/open flame. - No smoking. Use only in well-ventilated areas. Avoid contact with ignition and heat sources and oxidizers. Do not spray on an open flame or other ignition source. Keep out of reach of children.
- Storage** : Avoid increased storage temperature. Keep away from ignition sources such as heat/sparks/open flame. - No smoking. Avoid contact with ignition and heat sources and oxidizers. Store away from oxidizing agents. Store in cool/well-ventilated place.

8. Exposure controls/personal protection

Occupational exposure limits

Ingredient name	Exposure limits
butane	Safe Work Australia (Australia, 8/2005). TWA: 1900 mg/m ³ 8 hour(s). TWA: 800 ppm 8 hour(s).
propane	ACGIH TLV (United States, 2/2010). TWA: 1000 ppm 8 hour(s).
(R)-p-mentha-1,8-diene	TRGS900 AGW (Germany, 8/2010). Skin sensitizer. PEAK: 40 ppm 15 minute(s). PEAK: 220 mg/m ³ 15 minute(s). TWA: 20 ppm 8 hour(s). TWA: 110 mg/m ³ 8 hour(s).

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Exposure controls

- Engineering measures** : In case of insufficient ventilation, wear suitable respiratory equipment.
- Hygiene measures** : When using do not eat, drink or smoke.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Respiratory** : Chemical splash goggles. Protective clothing must be worn.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

8. Exposure controls/personal protection

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

Physical state : Liquid. [Viscous liquid.]
Color : White.
Odor : Characteristic. Fragrance-like.
Boiling point : 78.333°C (173°F)
Relative density : 1.01 to 125
Flash point : Closed cup: >75°C (>167°F)
pH : 5.7 to 7
Aerosol product
Type of aerosol : Spray
Flame duration : Not available.

10. Stability and reactivity

Chemical stability : Stable under recommended storage and handling conditions (see section 7).
Possibility of hazardous reactions : Not available.
Conditions to avoid : Store away from direct sunlight. Avoid contact with ignition and heat sources and oxidizers. Store away from oxidizing agents.
Materials to avoid : Separate from oxidizing materials.
Hazardous decomposition products : Products of combustion

11. Toxicological information

Potential acute health effects

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Eye contact : No known significant effects or critical hazards.

Acute toxicity

Product/ingredient name	Result	Dose	Exposure
butane	LC50 Inhalation Vapor	658000 mg/m3	4 hours
(R)-p-mentha-1,8-diene	LD50 Dermal	>5000 mg/kg	-
	LD50 Oral	4400 mg/kg	-

Conclusion/Summary : Not available.

Potential chronic health effects

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Product/ingredient name	Result	Score	Exposure	Observation
(R)-p-mentha-1,8-diene	Skin - Mild irritant	-	24 hours 10 Percent	-

Conclusion/Summary : Not available.

Sensitizer

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

11. Toxicological information

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Chronic effects : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Ingestion : No specific data.

Skin : No specific data.

Eyes : Adverse symptoms may include the following:
irritation
redness

Target organs : Contains material which may cause damage to the following organs: heart, central nervous system (CNS).

12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
(R)-p-mentha-1,8-diene	Acute EC50 421 ug/L Fresh water	Daphnia - Daphnia magna - <24 hours	48 hours
	Acute EC50 688 ug/L Fresh water	Fish - Pimephales promelas - 34 days - 19.1 mm - 0.085 g	96 hours

Conclusion/Summary : Not available.

Other ecological information

Persistence/degradability

Conclusion/Summary : Not available.

Bioaccumulative potential


Product/ingredient name	LogP _{ow}	BCF	Potential
butane	2.89	-	low
propane	2.36	-	low
(R)-p-mentha-1,8-diene	4.2	-	high

Other adverse effects : No known significant effects or critical hazards.


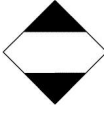

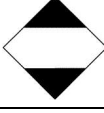


13. Disposal considerations

Methods of disposal : Dispose of according to all federal, state and local applicable regulations.

14. Transport information

Regulation	UN number	Proper shipping name	Classes	PG*	Label	Additional information
ADG	UN1950	AEROSOLS	2.1	-		Hazchem code 2YE

14. Transport information

ADR	UN1950	AEROSOLS	2	-	 	Limited quantity LQ2 Special provisions 190 327 625 Tunnel code (D)
IMDG	UN1950	AEROSOLS	2.1	-	 	Emergency schedules (EmS) F-D, S-U
IATA	UN1950	Aerosols, flammable	2.1	-	 	Passenger and Cargo Aircraft Quantity limitation: 75 kg Packaging instructions: 203 Cargo Aircraft Only Quantity limitation: 150 kg Packaging instructions: 203 Limited Quantities - Passenger Aircraft Quantity limitation: 30 kg Packaging instructions: Y203

PG* : Packing group

15. Regulatory information

Standard for the Uniform Scheduling of Drugs and Poisons

Not regulated.

Control of Scheduled Carcinogenic Substances

Not available.

No listed substance

Australia inventory (AICS) : All ingredients that are not contained in the AICS database are below registration thresholds.

16. Other information

Date of issue : 9/17/2012.

Disclaimer

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.