



SAFETY DATA SHEET

BROMOTHANE R, SPECIALTY CLEANING FLUID

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

1. Identification

Product identifier

Product name BROMOTHANE R, SPECIALTY CLEANING FLUID

Product number M2S-BR2L, M2S-BR2D, M2S-BR2P, M2S-BR2G, MCC-BR2D, MCC-BR2L, MCC-BR2P, MCC-BR2G

Synonyms; trade names M2S-BRD, M2S-BR2D, M2S-BRP, M2S-BR2P, M2S-BRG, M2S-BR2G, M2S-BRL, M2S-BR2L

Recommended use of the chemical and restrictions on use

Application Cleaning agent.

Details of the supplier of the safety data sheet

Supplier MICROCARE CORPORATION

Manufacturer MICROCARE CORPORATION
595 John Downey Drive
New Britain, CT 06051
United States of America
CAGE: OATV9
Tel: + 1 800 638 0125, +1 860-827-0626
Fax: +1 860-827-8105
techsupport@microcare.com

Emergency telephone number

Emergency telephone CHEMTREC 1-800-424-9300 (within the U.S.)
+1 703-741-5970 (from anywhere in the world)

2. Hazard(s) identification

Classification of the substance or mixture

OSHA Regulatory Status This Product is Hazardous under the OSHA Hazard Communication Standard.

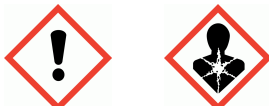
Physical hazards Not Classified

Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2A - H319 Carc. 2 - H351 Repr. 1B - H360FD STOT SE 3 - H335 STOT RE 2 - H373

Human health See Section 11 for additional information on health hazards.

Label elements

Pictogram



BROMOTHANE R, SPECIALTY CLEANING FLUID

Signal word	Danger
Hazard statements	H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H351 Suspected of causing cancer. H360FD May damage fertility. May damage the unborn child. H373 May cause damage to organs through prolonged or repeated exposure.
Precautionary statements	P261 Avoid breathing vapor/ spray. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P302+P352 If on skin: Wash with plenty of water. P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P314 Get medical advice/ attention if you feel unwell. P332+P313 If skin irritation occurs: Get medical advice/ attention. P337+P313 If eye irritation persists: Get medical advice/ attention. P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting. P403+P233 Store in a well-ventilated place. Keep container tightly closed. P501 Dispose of contents/ container in accordance with national regulations.
Supplemental label information	Safety data sheet available on request. For use in industrial installations only.
Contains	1-BROMOPROPANE, 2-METHYLPROPAN-2-OL, 1,2-EPOXYBUTANE

Other hazards

This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients

Mixtures

1-BROMOPROPANE	60-100%
CAS number: 106-94-5	
Classification	
Flam. Liq. 2 - H225	
Skin Irrit. 2 - H315	
Eye Irrit. 2A - H319	
Repr. 1B - H360FD	
STOT SE 3 - H335	
STOT RE 2 - H373	
PROPAN-2-OL	5-10%
CAS number: 67-63-0	
Classification	
Flam. Liq. 2 - H225	
Eye Irrit. 2A - H319	
STOT SE 3 - H336	

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DIMETHOXYMETHANE	1-5%
CAS number: 109-87-5	
Classification Not Classified	
2-METHYLPROPAN-2-OL	1-5%
CAS number: 75-65-0	
Classification Flam. Liq. 2 - H225 Acute Tox. 4 - H332 Eye Irrit. 2A - H319 STOT SE 3 - H335	
1,2-EPOXYBUTANE	1-5%
CAS number: 106-88-7	
Classification Flam. Liq. 2 - H225 Acute Tox. 4 - H302 Acute Tox. 4 - H312 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2A - H319 Carc. 2 - H351 STOT SE 3 - H335	

The full text for all hazard statements is displayed in Section 16.

Composition comments TSCA: The ingredients of this product are on the TSCA Inventory. The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of CFR 1900.1200

Composition

4. First-aid measures

Description of first aid measures

General information	Colorless to pale yellow liquid. The product is strongly irritating to eyes and skin. Prolonged contact may cause burns. Repeated exposure may cause chronic upper respiratory irritation. Harmful if swallowed. Keep out of the reach of children.
Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Keep affected person under observation. Get medical attention. Show this Safety Data Sheet to the medical personnel. If breathing stops, provide artificial respiration. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Consult a physician for specific advice.
Ingestion	Get medical attention.
Skin Contact	Remove contaminated clothing immediately and wash skin with soap and water. Remove contaminated clothing. Rinse with water.

Most important symptoms and effects, both acute and delayed

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General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Vapors may cause headache, fatigue, dizziness and nausea. Irritation of nose, throat and airway.
Ingestion	May cause stomach pain or vomiting. Congestion of the lungs may occur, producing severe shortness of breath. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.
Skin contact	Prolonged or repeated contact with skin may cause irritation, redness and dermatitis.
Eye contact	Irritation of eyes and mucous membranes. Profuse watering of the eyes.
<u>Indication of immediate medical attention and special treatment needed</u>	
Notes for the doctor	No specific recommendations. If in doubt, get medical attention promptly.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use water to keep fire exposed containers cool and disperse vapors.

Special hazards arising from the substance or mixture

Specific hazards The product is not flammable. Containers can burst violently or explode when heated, due to excessive pressure build-up. Vapors are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back.

Hazardous combustion products Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

Advice for firefighters

Protective actions during firefighting Warn everybody of potential hazards and evacuate if necessary. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Containers close to fire should be removed or cooled with water. Closed containers can burst violently when heated, due to excess pressure build-up. Take precautionary measures against static discharges. Ground container and transfer equipment to eliminate sparks from static electricity.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Warn everybody of potential hazards and evacuate if necessary. Follow precautions for safe handling described in this safety data sheet. Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.

Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground. Contain spillage with sand, earth or other suitable non-combustible material.

Methods and material for containment and cleaning up

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Methods for cleaning up Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. No smoking, sparks, flames or other sources of ignition near spillage. Contain and absorb spillage with sand, earth or other non-combustible material. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water.

Reference to other sections See Section 11 for additional information on health hazards.

7. Handling and storage

Precautions for safe handling

Usage precautions Good personal hygiene procedures should be implemented. Do not eat, drink or smoke when using the product. Avoid inhalation of vapors and spray/mists.

Conditions for safe storage, including any incompatibilities

Storage precautions Do not store near heat sources or expose to high temperatures. Store in closed original container at temperatures between 8°C and 28°C. Keep container tightly closed.

Specific end uses(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.

Reference to other sections. Store away from incompatible materials (see Section 10).

8. Exposure Controls/personal protection

Control parameters

Occupational exposure limits

1-BROMOPROPANE

Long-term exposure limit (8-hour TWA): ACGIH 0.1 ppm 0.5 mg/m³
A3

PROPAN-2-OL

Long-term exposure limit (8-hour TWA): OSHA 400 ppm 980 mg/m³
Long-term exposure limit (8-hour TWA): ACGIH 200 ppm 492 mg/m³
Short-term exposure limit (15-minute): ACGIH 400 ppm 984 mg/m³
A4

DIMETHOXYMETHANE

Long-term exposure limit (8-hour TWA): OSHA 1000 ppm 3100 mg/m³
Long-term exposure limit (8-hour TWA): ACGIH 1000 ppm 3110 mg/m³

2-METHYLPROPAN-2-OL

Long-term exposure limit (8-hour TWA): OSHA 100 ppm 300 mg/m³
Long-term exposure limit (8-hour TWA): ACGIH 100 ppm 303 mg/m³
A4

ACGIH = American Conference of Governmental Industrial Hygienists.
OSHA = Occupational Safety and Health Administration.
A3 = Confirmed Animal Carcinogen with Unknown Relevance to Humans.
A4 = Not Classifiable as a Human Carcinogen.

Additional Occupational Exposure Limits 1-Bromopropane: 5 ppm (CAL PEL)

Exposure controls

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Protective equipment



Appropriate engineering controls

This product must not be handled in a confined space without adequate ventilation. Provide adequate ventilation. Avoid inhalation of vapors. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles or face shield.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible.

Other skin and body protection

Wear suitable protective clothing as protection against splashing or contamination.

Hygiene measures

Promptly remove any clothing that becomes wet or contaminated. Eating, smoking and water fountains prohibited in immediate work area.

Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Clear liquid.
Color	Yellowish.
Odor	Strong. Characteristic.
Odor threshold	No information available.
pH	No information available.
Melting point	No information available.
Initial boiling point and range	70.9°C/159.6°F @ 101.3 kPa
Flash point	None°C Tag closed cup.
Evaporation rate	0.97 (TCA = 1)
Evaporation factor	No information available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	Upper flammable/explosive limit: 7.5 %(V) Lower flammable/explosive limit: 3.8 %(V)
Other flammability	No information available.
Vapor pressure	148 hPa @ 20°C
Vapor density	4.25
Relative density	1.25 (H ₂ O = 1) @ 25°C/77°F
Bulk density	No information available.
Solubility(ies)	.25g/100 ml @ 20°C Slightly soluble in water.
Partition coefficient	No information available.

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Auto-ignition temperature	No information available.
Decomposition Temperature	No information available.
Viscosity	0.49 cP @ 25°C/77°F
Explosive properties	No information available.
Refractive index	No information available.
Particle size	Not applicable.
Molecular weight	Not applicable.
Volatility	100%
Saturation concentration	No information available.
Critical temperature	No information available.
Volatile organic compound	No information available.
Flammability	The product is not flammable.

10. Stability and reactivity

Reactivity	The following materials may react strongly with the product: Alkaline earth metals. Powdered metal.
Stability	Stable at normal ambient temperatures and when used as recommended.
Possibility of hazardous reactions	Will not polymerize.
Conditions to avoid	The following materials may react strongly with the product: Strong acids. Strong alkalis. Organic compounds. Some metals. Avoid contact with the following materials: Acid anhydrides. Aluminum. Strong oxidizing agents. Strong acids.
Materials to avoid	Powdered metal. Alkali metals. Chemically-active metals.
Hazardous decomposition products	Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

Information on toxicological effects

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,708.0

Species Rabbit

ATE oral (mg/kg) 90,000.0

Acute toxicity - dermal

ATE dermal (mg/kg) 146,900.0

Acute toxicity - inhalation

ATE inhalation (gases ppm) 100,000.0

ATE inhalation (vapours mg/l) 176.11

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ATE inhalation (dusts/mists mg/l)	33.33
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Irritating to skin.
<u>Respiratory sensitization</u>	
Respiratory sensitization	No information available.
<u>Skin sensitization</u>	
Skin sensitization	No information available.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	No information available.
Genotoxicity - in vivo	No information available.
<u>Carcinogenicity</u>	
Carcinogenicity	Suspected of causing cancer.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	May damage fertility.
.	
Inhalation	Vapor from this product may be hazardous by inhalation. Vapors may irritate throat/respiratory system. Symptoms following overexposure may include the following: Headache. Dizziness. Drowsiness.
Ingestion	Liquid irritates mucous membranes and may cause abdominal pain if swallowed. May cause nausea, headache, dizziness and intoxication.
Skin Contact	Product has a defatting effect on skin. May cause allergic contact eczema.
Eye contact	May cause severe eye irritation.

Toxicological information on ingredients.

1-BROMOPROPANE

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 40.0

ATE inhalation (vapours mg/l) 40.0

Carcinogenicity

NTP carcinogenicity Reasonably anticipated to be a human carcinogen.

PROPAN-2-OL

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 16,000.0

ATE inhalation (vapours mg/l) 16,000.0

Carcinogenicity

IARC carcinogenicity IARC Group 3 Not classifiable as to its carcinogenicity to humans.

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NTP carcinogenicity Not listed.

OSHA Carcinogenicity Not listed.

1,2-EPOXYBUTANE**Acute toxicity - oral**

ATE oral (mg/kg) 500.0

Acute toxicity - dermal

ATE dermal (mg/kg) 1,100.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 6.3

ATE inhalation (vapours mg/l) 6.3

Carcinogenicity

IARC carcinogenicity IARC Group 2B Possibly carcinogenic to humans.

12. Ecological Information

Ecotoxicity No data on possible environmental effects have been found.

Toxicity Not considered toxic to fish.

Ecological information on ingredients.**PROPAN-2-OL****Acute aquatic toxicity**

Acute toxicity - fish LC₅₀, 96 hours: 9,640 mg/l, Fish

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 5102 mg/l, Daphnia magna

Acute toxicity - aquatic plants IC₅₀, 72 hours: >2,000 mg/l, Algae

Persistence and degradability

Persistence and degradability The product contains volatile organic compounds (VOCs) which have a photochemical ozone creation potential.

Bioaccumulative potential

Bio-Accumulative Potential No data available on bioaccumulation.

Partition coefficient No information available.

Ecological information on ingredients.**1-BROMOPROPANE**

Partition coefficient Pow: 2.1

PROPAN-2-OL

Partition coefficient : 0.05

BROMOTHANE R, SPECIALTY CLEANING FLUID

Mobility in soil

Mobility Avoid the spillage or runoff entering drains, sewers or watercourses.

Other adverse effects

Other adverse effects The product contains a substance which has a photochemical ozone creation potential.

13. Disposal considerations

Waste treatment methods

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

14. Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DOT).

UN proper shipping name

Not applicable. No information required.

Transport hazard class(es)

Not applicable. No information required.

Transport labels

No transport warning sign required.

Packing group

Not applicable. No information required.

Environmental hazards

Environmentally Hazardous Substance
No.

Special precautions for user

Not applicable. No information required.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not relevant. No information required.

15. Regulatory information

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities
Not listed.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

1,2-EPOXYBUTANE
Final CERCLA RQ: 100(45.4) pounds (Kilograms)

SARA Extremely Hazardous Substances EPCRA Reportable Quantities
Not listed.

SARA 313 Emission Reporting

BROMOTHANE R, SPECIALTY CLEANING FLUID

2-METHYLPROPAN-2-OL

1.0 %

1-BROMOPROPANE

0.1 %

1,2-EPOXYBUTANE

0.1 %

CAA Accidental Release Prevention

Not listed.

SARA (311/312) Hazard Categories

Acute
Chronic

OSHA Highly Hazardous Chemicals

Not listed.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

Known to the State of California to cause developmental, female and male reproductive toxicity.

1-BROMOPROPANE

Known to the State of California to cause cancer.

California Air Toxics "Hot Spots" (A-I)

PROPAN-2-OL

Present.

2-METHYLPROPAN-2-OL

Present.

1,2-EPOXYBUTANE

Present.

California Air Toxics "Hot Spots" (A-II)

Not listed.

California Directors List of Hazardous Substances

PROPAN-2-OL

Present.

DIMETHOXYMETHANE

Present.

2-METHYLPROPAN-2-OL

Present.

Massachusetts "Right To Know" List

PROPAN-2-OL

Present.

DIMETHOXYMETHANE

Present.

2-METHYLPROPAN-2-OL

Present.

BROMOTHANE R, SPECIALTY CLEANING FLUID

1-BROMOPROPANE

Present.

1,2-EPOXYBUTANE

Present.

Rhode Island "Right To Know" List

PROPAN-2-OL

Present.

DIMETHOXYMETHANE

Present.

2-METHYLPROPAN-2-OL

Present.

1,2-EPOXYBUTANE

Present.

Minnesota "Right To Know" List

PROPAN-2-OL

Present.

DIMETHOXYMETHANE

Present.

2-METHYLPROPAN-2-OL

Present.

1,2-EPOXYBUTANE

Present.

New Jersey "Right To Know" List

PROPAN-2-OL

Present.

DIMETHOXYMETHANE

Present.

2-METHYLPROPAN-2-OL

Present.

1-BROMOPROPANE

Present.

1,2-EPOXYBUTANE

Present.

Pennsylvania "Right To Know" List

PROPAN-2-OL

Present.

DIMETHOXYMETHANE

Present.

2-METHYLPROPAN-2-OL

Present.

1-BROMOPROPANE

Present.

BROMOTHANE R, SPECIALTY CLEANING FLUID*1,2-EPOXYBUTANE*

Present.

Inventories**Canada - DSL/NDSL***DIMETHOXYMETHANE*

DSL

2-METHYLPROPAN-2-OL

DSL

1-BROMOPROPANE

DSL

1,2-EPOXYBUTANE

DSL

US - TSCA

Yes

16. Other information

Revision comments	NOTE: Lines within the margin indicate significant changes from the previous revision.
Revision date	4/20/2018
Revision	26
Supersedes date	1/24/2018
SDS No.	BULK - BR2
SDS status	Approved.
Hazard statements in full	H225 Highly flammable liquid and vapor. H302 Harmful if swallowed. H312 Harmful in contact with skin. H315 Causes skin irritation. H319 Causes serious eye irritation. H332 Harmful if inhaled. H335 May cause respiratory irritation. H336 May cause drowsiness or dizziness. H351 Suspected of causing cancer. H360FD May damage fertility. May damage the unborn child. H373 May cause damage to organs through prolonged or repeated exposure.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.