



SAFETY DATA SHEET

Muskol Aerosol 23.5% DEET

Version 1.0

Revision Date 03/01/2017

122000014179
Print Date 03/01/2017

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product information

Product Name: Muskol Aerosol 23.5% DEET
SDS Number: 122000014179
UI Number: 1612370

Use : Insect-repellent

Company

Bayer Inc.
2920 Matheson Boulevard East
Mississauga, ON L4W 5R6
CANADA
(800) 622-2937

In case of emergency: Chemtrec: (800) 424-9300
CANUTEC: (613) 996-6666

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to national GHS implementation:

Flammable aerosols, Category 1 (H222)
Skin irritation, Category 2 (H315)
Eye irritation, Category 2A (H319)

Label elements

Labelling according to national GHS implementation:



Danger

Hazard statements:

H222 Extremely flammable aerosol.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statements:

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Do not pierce or burn, even after use.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ eye protection/ face protection.



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Response:

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

Storage:

P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

Other hazards

Other hazards which do not result in classification:

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Hazardous components

N,N-Diethyl-m-toluamide

Concentration [Weight percent] 24

CAS-No.: 134-62-3

CAS name: Benzamide, N,N-diethyl-3-methyl-

GHS Classification:



Acute Tox. 4 H302

Eye Irrit. 2 H319

Skin Irrit. 2 H315

Ethanol

Concentration [Weight percent] 44

CAS-No.: 64-17-5

CAS name: Ethanol

GHS Classification:



Flam. Liq. 2 H225

Propane

Concentration [Weight percent] 10

CAS-No.: 74-98-6

CAS name: Propane

GHS Classification:



Flam. Gas 1 H220

Press. Gas Liquef. Gas H280

Isobutane

Concentration [Weight percent] 7.6

CAS-No.: 106-97-8

CAS name: Butane



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GHS Classification:



Flam. Gas 1 H220
Press. Gas Liquef. Gas

Isobutane

Concentration [Weight percent] 3.2

CAS-No.: 75-28-5

CAS name: Propane, 2-methyl-

GHS Classification:



Press. Gas Liquef. Gas H280
Flam. Gas 1 H220

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

Description of first aid measures

General advice: No hazards which require special first aid measures.

If inhaled: If symptoms persist, call a physician.

In case of skin contact: If skin irritation persists, call a physician.

In case of eye contact: Flush eyes with water as a precaution.

If swallowed: Not an expected entry route.

Most important acute symptoms/effects

Indication of any immediate medical attention and special treatment needed

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Any

Special hazards arising from the substance or mixture

Specific hazards during firefighting: Fire may cause evolution of: Carbon monoxide (CO) Carbon dioxide (CO₂)

Further information: Prevent fire extinguishing water from contaminating surface water or the ground water system.

Advice for firefighters

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.



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6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Use adequate ventilation. Keep people away from and upwind of spill/leak.

Environmental precautions

Methods and materials for containment and cleaning up

Methods for cleaning up: Suppress (knock down) gases/vapours/mists with a water spray jet. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Place in closed containers. Label for proper disposal.

Reference to other sections

Additional advice: Keep away from/remove sources of ignition. Possible need to alert the neighbourhood.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling:

Use adequate ventilation.

Take measures to prevent the build up of electrostatic charge. Keep away from open flames, hot surfaces and sources of ignition.

Conditions for safe storage, including any incompatibilities

Specific end use(s)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Ethanol	64-17-5	TWA	1,000 ppm 1,880 mg/m ³	CA AB OEL
		STEL	1,000 ppm	CA BC OEL
		TWAEV	1,000 ppm 1,880 mg/m ³	CA QC OEL
Propane	74-98-6	TWA	1,000 ppm	CA AB OEL
		TWA	1,000 ppm	CA BC OEL
		TWAEV	1,000 ppm 1,800 mg/m ³	CA QC OEL
Isobutane	106-97-8	TWA	1,000 ppm	CA ON OEL
		TWA	1,000 ppm	CA AB OEL
		TWA	600 ppm	CA BC OEL
		STEL	750 ppm	CA BC OEL



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		TWAEV	800 ppm 1,900 mg/m ³	CA QC OEL
Isobutane	75-28-5	TWA	1,000 ppm	CA AB OEL
		TWA	1,000 ppm	CA BC OEL
		TWA	800 ppm	CA ON OEL

Personal protective equipment

- Respiratory protection : Recommended Filter type:
HEPA

None required for consumer use of this product.
- Hand protection
Material : Chemically resistant gloves.
- Remarks : None required for consumer use of this product.
- Eye protection : Safety glasses
None required for consumer use of this product.
- Protective measures : Wear suitable protective equipment.
Please consult label for end-user requirements.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

- Form: aerosol
Colour: colourless, to, yellowish
Odour: Alcohol
Melting point/range: No statements available.
Boiling point/boiling range: 79 - 100 °C at 1,013 hPa
Density: ca. 0.75 - 0.79 g/cm³ at 20 °C at 1,013 hPa
- Bulk density: No statements available.
Vapour pressure: 3,100 - 3,790 hPa at 20 °C
Viscosity, dynamic: No statements available.
Viscosity, kinematic: No statements available.
Flow time: No statements available.
Surface tension: No statements available.
Water solubility: No statements available.
Solubility(ies): No statements available.
pH: No statements available.
Corrosive to metal: No statements available.
Partition coefficient (n-octanol/water): Ethanol
log Pow: -0.320



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	Isobutane
	log Pow: 2.9
Auto-flammability:	422 °C
Flash point:	13 °C
	Information refers to the main component.
Inflammability (solid, gaseous):	No statements available.
Explosion limits:	Ethanol
	upper: 15 %(V) lower: 3.5 %(V)
	Propane
	upper: 10.8 %(V) lower: 1.7 %(V)
	Isobutane
	upper: 9.4 %(V) lower: 1.4 %(V)
	upper: 9.4 %(V) 231 mg/m ³ lower: 1.5 %(V) 37 mg/m ³

Other information

Miscibility with water: No statements available.

10. STABILITY AND REACTIVITY

Reactivity

No statements available.

Reactions with water / air:

No statements available.

Ignition temperature:

Ethanol

425 °C

Propane

470 °C DIN 51794

Isobutane

365 °C DIN 51794

460 °C DIN 51794

Burning number:

No statements available.

Chemical stability

Thermal decomposition:

No data available

Dust explosion characteristic number:

No statements available.

Dust explosion class:



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Not applicable

Impact sensitivity:

No data available

Hazardous reactions:

No data available

Explosive properties:

No statements available.

Possibility of hazardous reactions

deflagration ability:

No statements available.

Smoldering combustion:

No statements available.

Conditions to avoid

Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 122°F (50 °C).

Minimum ignition energy:

No data available

Oxidizing properties:

No statements available.

Incompatible materials

Materials to avoid:

Oxidizing agents

Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂)

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate (ATE): 4,875 mg/kg
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate (ATE): > 5,000 mg/kg
Method: Calculation method

Components:

N,N-Diethyl-m-toluamide:

Acute oral toxicity : LD50 (Mouse): 1,170 mg/kg

Assessment: Harmful if swallowed.



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Ethanol:

Acute oral toxicity : LD50 (Rat): 10,470 mg/kg
Method: OECD 401
Assessment: No adverse effect has been observed in acute toxicity tests.

Acute inhalation toxicity : LC50 (Rat): 124.7 mg/l, ca. 65360 ppm
Exposure time: 4 h
Method: OECD 403
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): 15,800 mg/kg
Assessment: No adverse effect has been observed in acute toxicity tests.

Propane:

Acute oral toxicity : Assessment: No adverse effect has been observed in acute toxicity tests.

Acute inhalation toxicity : Symptoms: Daze, Suffocation
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : Assessment: No adverse effect has been observed in acute toxicity tests.

Isobutane:

Acute inhalation toxicity : LC50 (Rat): 65.8 mg/l
Exposure time: 4 h
Assessment: The substance or mixture has no acute inhalation toxicity

Skin corrosion/irritation

Components:

N,N-Diethyl-m-toluamide:

Assessment: Causes skin irritation.

Ethanol:

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Propane:

Remarks: Rapid evaporation of the liquid may cause frostbite.



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Serious eye damage/eye irritation

Components:

N,N-Diethyl-m-toluamide:

Assessment: Causes serious eye irritation.

Ethanol:

Species: Rabbit
Result: Eye irritation
Method: OECD 405

Propane:

Remarks: Rapid evaporation of the liquid may cause frostbite.

Respiratory or skin sensitisation

Components:

Ethanol:

Test Type: Skin sensitisation
Species: Guinea pig
Method: Local lymph node test (LLNA)
Result: Does not cause skin sensitisation.

Assessment: An acute toxic effect is not expected.

Propane:

Assessment: An acute toxic effect is not expected.

Germ cell mutagenicity

Components:

Ethanol:

Genotoxicity in vitro : Test Type: Ames test
Species: Salmonella typhimurium
Method: OECD 471
Result: negative

: Test Type: Mouse lymphoma assay
Method: OECD 476
Result: negative

Genotoxicity in vivo : Test Type: Chromosome aberration test in vivo
Species: Mouse
Method: OECD 478
Result: ambiguous

Test Type: Micronucleus test
Species: Mouse
Method: OECD 474



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Result: negative

Components:

Ethanol:

Repeated dose toxicity - Assessment : An acute toxic effect is not expected.

Propane:

Repeated dose toxicity - Assessment : An acute toxic effect is not expected.

Further information

Components:

Ethanol:

Remarks: Breathing of the fumes may lead to narcotic symptoms.

Remarks: **If inhaled:**

headaches

Vomiting

Nausea

Remarks: **After absorption of large quantities**

hypotension

coma

Unconsciousness

respiratory paralysis

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

N,N-Diethyl-m-toluamide:

Ecotoxicology Assessment

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

Ethanol:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 8,140 mg/l
Exposure time: 48 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 9,268 - 14,221 mg/l

Toxicity to algae : Toxic limit concentration (Scenedesmus quadricauda (Green algae)): 5,000 mg/l



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Toxicity to bacteria : Toxic limit concentration (*Pseudomonas putida*): 6,500 mg/l

Ecotoxicology Assessment

Acute aquatic toxicity : slightly water endangering

Propane:

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Persistence and degradability

Components:

Ethanol:

Biodegradability : Result: rapidly biodegradable

Bioaccumulative potential

Components:

Ethanol:

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: -0.320

Isobutane:

Bioaccumulation : Remarks: Low potential for bioaccumulation

Partition coefficient: n-octanol/water : log Pow: 2.9

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : Do not allow to enter surface waters or groundwater.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic.

However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material



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containing the product or derived from the product should be classified as a hazardous waste.

14. TRANSPORT INFORMATION

Sea transport (IMDG)

UN Number	1950
Description of the goods	AEROSOLS
Class	2.1
IMDG-Labels	2.1
Marine pollutant	no

Air transport (IATA)

UN Number	1950
Description of the goods	AEROSOLS, FLAMMABLE
Class	2.1
Dangerous goods labels	2.1
Environmentally hazardous	no

Land transport TDG

UN Number	1950
Description of the goods	AEROSOLS
Class	2.1
Dangerous goods labels	2.1
Marine pollutant	no

15. REGULATORY INFORMATION

The components of this product are reported in the following inventories:

DSL All components of this product are on the Canadian DSL

Canadian lists

No substances are subject to a Significant New Activity Notification.

16. OTHER INFORMATION

Full text of H-Statements mentioned in chapters 2 and 3

H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H225	Highly flammable liquid and vapour.
H280	Contains gas under pressure; may explode if heated.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.



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Further information

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