BIOADVANCED SCIENCE-BASED SOLUTIONS BERMUDAGRASS CONTROL FOR LAWNS CONCENTRATE

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name	BIOADVANCED SCIENCE-BASED SOLUTIONS BERMUDAGRASS CONTROL FOR LAWNS CONCENTRATE
Product code	
SDS Number	20NAHER227
EPA Registration No.	92564-85

Relevant identified uses of the substance or mixture and uses advised against

Use	Herbicide
Restrictions on use	See product label for restrictions.

Information on manufacturer

SBM Life Science Corp.
11000 Weston Parkway, Suite150
Cary, NC 27513
United States

Emergency Telephone Number (24hr/ 7 days)	1-877-229-3763 (24 hours/day)
Product Information Telephone Number	1-877-229-3724
SDS Information or Request	SDS@sbm-company.com

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

Signal word: **Caution**

Hazard statements

Precautionary statements
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.
IF exposed or concerned: Get medical advice/attention.

Store locked up.
Dispose of contents/container in accordance with local regulation.

Other Hazards Not Otherwise Classified (HNOC)
No physical hazards not otherwise classified
No heath hazards not otherwise classified

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Average % by Weight
Topramezone	210631-68-8	0.104
Bentazone Na salt	50723-80-3	4.13

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice — When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Inhalation — Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.

Skin contact — Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.

Eye contact — Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.

Ingestion — Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Most important symptoms and effects, both acute and delayed

Symptoms — No symptoms known or expected.

Indication of any immediate medical attention and special treatment needed

Treatment — Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media	
Suitable	Water, Carbon dioxide (CO2), Dry chemical, Foam, Sand
Unsuitable	No Data
Special hazards arising from the substance or mixture	No Data - Liquid Formulation
Advice for firefighters	Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.
Special protective equipment for fire-fighters	Keep out of smoke. Fight fire from upwind position. Do not allow run-off from fire fighting to enter drains or water courses.
Further information	
Flash point	> 100 C (Closed Cup)
Autoignition temperature	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Explosivity	not shock sensitive

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions	Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up	Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.
Additional advice	Use personal protective equipment.
Reference to other sections	Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Handle and open container in a manner as to prevent spillage.
Hygiene measures	Remove Personal Protective Equipment (PPE) immediately after handling this product. Remove Gloves and dispose of properly. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Components	CAS-No.	Control parameters	Update	Basis
Topramezone	210631-68-8	No Limits established		

Components	CAS-No.	Control parameters	Update	Basis
Bentazone	25057-89-0	No Limits established		

Exposure controls

Personal protective equipment
In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection	When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.
Hand protection	Latex rubber gloves
Eye protection	Safety glasses with side-shields
Skin and body protection	Wear long-sleeved shirt and long pants and shoes plus socks.
General protective measures	Do not allow children or pets to enter the treated area until grass or soil is dry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	opaque light red color
Physical State	liquid
Odor	pleasant flower like
Odour Threshold	no data available
pH	5.25 (neat)
Vapor Pressure	not applicable
Vapor Density (Air = 1)	not applicable
Bulk density	1.016 @ 20 C
Evapouration rate	not applicable
Boiling Point	not applicable
Melting / Freezing Point	not applicable
Water solubility	Partially soluble
Minimum Ignition Energy	Not appliacble
Decomposition temperature	no data available
Partition coefficient: n-octanol/water	not applicable
Viscosity	1.55 cPs at 20 C, 0.92 cPs at 40 C
Flash point	>100 C (Closed Cup)
Autoignition temperature	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Explosivity	Liquid formulation

SECTION 10: STABILITY AND REACTIVITY

Reactivity	
Thermal decomposition	no data available
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Strong Oxidizers
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Skin contact, Eye contact, Ingestion
Immediate Effects	
Eye	No eye irritation noted.
Skin	May cause slight irritation.
Ingestion	Non toxic
Inhalation	Inhalation not likely.
Information on toxicological effects	
Acute oral toxicity	LD50 (male/female combined rat) > 5,000 mg/kg
Acute inhalation toxicity	LC50 (male/female combined rat) > 2.15 mg/l Exposure time: 4 h Determined in the form of aerosol
Acute dermal toxicity	LD50 (male/female combined rat) > 5,000 mg/kg
Skin irritation	Mild skin irritation. (rabbit)
Eye irritation	No eye irritation. (rabbit)
Sensitisation	Non-sensitizing. (mice)

Assessment repeated dose toxicity

No Data

Assessment Mutagenicity

Topramezone was not mutagenic in tests with mammalian cell cultures
Bentazone - no data available.

Assessment Carcinogenicity
Topramezone is not expected to be carcinogenic to animals in low doses

Bentazone - Tumors have been seen in rats given 200 mg/kg/day of bentazon, results questionable

ACGIH

None.

NTP

None.

IARC

None.

OSHA

None.

Assessment toxicity to reproduction

Topramezone - No data

Bentazone - No data

Assessment developmental toxicity

Topramezone -animal studies gave indication of developmental toxic/ teratogenic effects with high doses. May cause harm to the unborn child

Bentazone: - No data

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish	LC50 (Rainbow trout (Oncorhynchus mykiss) 8.71 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient Topramezone NOEC >9.16 mg/liter (Pimephales promelas) Exposure time: 35 days The value mentioned relates to the active ingredient Bentazon
Toxicity to aquatic invertebrates	EC50 (Water flea (Daphnia magna)) 12.1 mg/l Exposure time: 48 Hours The value mentioned relates to the active ingredient Topramezone NOEC - >91.6 mg/ liter (Daphnia magna) Exposure time: 21 days The value mentioned relates to the formulated Bentazon
Toxicity to aquatic plants	NOEC - 0.001mg / liter (Lemna gibba) Exposure time: 7 days The value mentioned relates to the active ingredient Topramezone
Toxicity to aquatic animals	LD50 (Mallard duck) 2000 mg/kg LD50 (Japanese quail) 720 mg/kg The values mentioned relates to the formulated Bentazon
Biodegradability	Topramezone - not readily biodegradable Bentazone - not readily biodegradable

Koc	Topramezone: log Kow: -1.52 Bentazone - : No data
Bioaccumulation	Topramezone: No significant bioaccumulation potential Bentazone: Low bioaccumulation potential
Mobility in soil	Topramezone: Moderately mobile in soils Bentazone: No data

Environmental precautions	Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product as specified on the label. Do not allow to get into surface water, drains and ground water.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	Pesticide, or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.
Contaminated packaging	Rinsed packaging may be acceptable for landfill, otherwise incineration will be required in accordance with local regulations. If burned, stay out of smoke.
RCRA Information	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

49CFR	Not dangerous goods / not hazardous material

IMDG

UN number	**3082**
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Topramezone)

IATA

UN number	**30**82
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Topramezone)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 92564-85
US Federal Regulations
TSCA list
None.
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
None.
SARA Title III - Section 302 - Notification and Information
None.
SARA Title III - Section 313 - Toxic Chemical Release Reporting
None.
US States Regulatory Reporting
CA Prop65
This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients
None.

Canadian Regulations
Canadian Domestic Substance List
None.

Environmental
CERCLA
None.
Clean Water Section 307 Priority Pollutants
None.
Safe Drinking Water Act Maximum Contaminant Levels
None

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EPA/FIFRA Information:
EPA Reg # 92564-85.

Signal word:	Caution!
Hazard statements:	Avoid contact with skin, eyes and clothing. Wash thoroughly with soap and water after handling.

SECTION 16: OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1	Flammability - 0	Instability - 1	Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1	Flammability - 0	Physical Hazard - 0	PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: New Issue

Date of Previous Revision: Not Applicable

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are trademarks of SBM Life Science Corp.