

BUSH HOG

Safety Data Sheet

SECTION 1: Product and company identification

Trade name : BUSH HOG
Use of the substance/mixture : Herbicide; Industrial use
Product code : 03200005 SDS Number: 0320
Company : Misco Industrial LLC
1018 Stearman Drive
White House, TN 37188 - USA
T 615-334-1861
Emergency number : 615-334-1861

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Liq. 4 H227
Acute Tox. 4 (Dermal) H312
Acute Tox. 4 (Inhalation:dust,mist) H332
Skin Irrit. 2 H315
Eye Irrit. 2 H319
Carc. 1B H350
STOT SE 3 H336
STOT RE 2 H373
Asp. Tox. 1 H304

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

Combustible liquid
May be fatal if swallowed and enters airways
Harmful in contact with skin or if inhaled
Causes skin irritation
Causes serious eye irritation
May cause drowsiness or dizziness
May cause cancer
May cause damage to organs (liver, thymus, bone marrow) through prolonged or repeated exposure

Precautionary statements (GHS-US) :

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Keep away from open flames, sparks, heat. - No smoking
Do not breathe mist, spray, vapors
Avoid breathing mist, spray, vapors
Wash thoroughly after handling
Use only outdoors or in a well-ventilated area
Wear protective clothing, eye protection, protective gloves
If swallowed: Immediately call a POISON CENTER, a doctor
If on skin: Wash with plenty of water
If inhaled: Remove person to fresh air and keep comfortable for breathing
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If exposed or concerned: Get medical advice/attention
Call a doctor, a POISON CENTER if you feel unwell
Get medical advice/attention if you feel unwell
Specific treatment (see First aid measures on this label)
Specific treatment (see First aid measures on this label)
Do NOT induce vomiting
If skin irritation occurs: Get medical advice/attention
If eye irritation persists: Get medical advice/attention
Take off contaminated clothing and wash it before reuse
In case of fire: Use dry extinguishing powder, carbon dioxide (CO₂), alcohol resistant foam to extinguish

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Store in a well-ventilated place. Keep container tightly closed
Store in a well-ventilated place. Keep cool
Store locked up
Dispose of contents/container to comply with local/regional/national regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

Full text of H-phrases: see section 16

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Petroleum Solvent	(CAS-No.) 68476-34-6	75 - 90	Flam. Liq. 3, H226 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Carc. 2, H351 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304
Glycol Ether EB	(CAS-No.) 111-76-2	10 - 20	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Asp. Tox. 1, H304
2-ethylhexyl 2,4-dichlorophenoxyacetate	(CAS-No.) 1928-43-4	0.98 - 1.20	Acute Tox. 4 (Oral), H302
bromacil	(CAS-No.) 314-40-9	0.93 - 1.03	Eye Irrit. 2A, H319
naphthalene	(CAS-No.) 91-20-3	0 - 0.25	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Carc. 1B, H350 Aquatic Acute 1, H400

A specific chemical identity and/or percentage of composition has been withheld as a trade secret. Any concentration shown as a range is to protect confidentiality or is due to batch variation.

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : If you feel unwell, seek medical advice (show the label where possible). IF exposed or concerned: Get medical advice/attention.
- First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Consult a doctor/medical service.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/effects : May cause cancer. May be fatal if swallowed and enters airways. Harmful if inhaled. Harmful in contact with skin. Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness. May cause damage to organs (liver, thymus, bone marrow) through prolonged or repeated exposure.
- Symptoms/effects after inhalation : Harmful if inhaled. May cause drowsiness or dizziness.
- Symptoms/effects after skin contact : Causes skin irritation. Harmful in contact with skin.
- Symptoms/effects after eye contact : Causes serious eye irritation.
- Symptoms/effects after ingestion : May be fatal if swallowed and enters airways.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

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SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Dry chemical powder. Carbon dioxide. Alcohol-resistant foam.
Unsuitable extinguishing media : Solid water jet ineffective as extinguishing medium.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Combustible liquid.
Explosion hazard : Explosion risk in case of fire. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. May be ignited by sparks. May form flammable/explosive vapor-air mixture.
Reactivity : On burning: release of toxic and corrosive gases/vapors (nitrous vapors, sulphur oxides, carbon monoxide - carbon dioxide). If the product is involved in a fire, it can release toxic chlorine gases. Reacts violently with (strong) oxidizers.

5.3. Advice for firefighters

- Firefighting instructions : Exercise caution when fighting any chemical fire. In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers. Take account of environmentally hazardous firefighting water.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Remove ignition sources. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

- Protective equipment : Protective goggles. Gloves. Protective clothing.
Emergency procedures : Evacuate unnecessary personnel. No naked flames or sparks.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
Emergency procedures : Stop leak if safe to do so. Stop release. Ventilate area.

6.2. Environmental precautions

- Avoid release to the environment. Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

- For containment : Contain released substance, pump into suitable containers.
Methods for cleaning up : This material and its container must be disposed of in a safe way, and as per local legislation. Take up liquid spill into inert absorbent material, e.g.: sand/earth. Clean contaminated surfaces with a soap solution.

6.4. Reference to other sections

- No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Handle empty containers with care because residual vapors are flammable. Keep away from open flame, sparks, excessive heat. - No smoking.
Precautions for safe handling : Comply with the legal requirements. Do not handle until all safety precautions have been read and understood. Do not breathe vapors. Use personal protective equipment as required. Do not eat, drink or smoke when using this product. Do not get in eyes, on skin, or on clothing. Handle and open the container with care. Keep away from sources of ignition - No smoking. Take precautions against electrostatic charges. Obtain special instructions before use. Remove contaminated clothing immediately.
Hygiene measures : Wash thoroughly after handling. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.
Storage conditions : Keep container tightly closed. Keep only in the original container in a cool, well ventilated place away from: sparks, open flames, excessive heat.
Incompatible products : Oxidizing agent.
Incompatible materials : Sources of ignition.

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Heat-ignition	: KEEP SUBSTANCE AWAY FROM: ignition sources. heat sources.
Information on mixed storage	: KEEP SUBSTANCE AWAY FROM: oxidizing agents.
Storage area	: Store away from heat. Store in a cool area. Store in a dry area. Store in a well-ventilated place. Keep locked up.
Special rules on packaging	: Keep only in original container. meet the legal requirements.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

bromacil (314-40-9)		
ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³ (Bromacil; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
naphthalene (91-20-3)		
ACGIH	ACGIH TWA (ppm)	10 ppm
ACGIH	Remark (ACGIH)	Hematologic eff; URT & eye irr; Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure)
OSHA	OSHA PEL (TWA) (mg/m ³)	50 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	10 ppm
Glycol Ether EB (111-76-2)		
ACGIH	ACGIH TWA (ppm)	20 ppm
ACGIH	Remark (ACGIH)	Eye & URT irr
OSHA	OSHA PEL (TWA) (mg/m ³)	240 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	50 ppm
2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4)		
Not applicable		
Petroleum Solvent (68476-34-6)		
Not applicable		

8.2. Exposure controls

Appropriate engineering controls	: Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.
Personal protective equipment	: Use appropriate personal protective equipment when risk assessment indicates this is necessary. Gloves. Protective clothing. Protective goggles. Safety glasses.



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear, red colored liquid.
Odor	: Fuel oil odor
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available

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Boiling point	: No data available
Flash point	: 145 °F
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: Heating may cause a fire or explosion.
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Specific gravity / density	: 0.875 g/ml
Solubility	: Insoluble in water.
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: < 20 cSt
Viscosity, dynamic	: No data available
VOC content	: > 90 %

SECTION 10: Stability and reactivity

10.1. Reactivity

On burning: release of toxic and corrosive gases/vapors (nitrous vapors, sulphur oxides, carbon monoxide - carbon dioxide). If the product is involved in a fire, it can release toxic chlorine gases. Reacts violently with (strong) oxidizers.

10.2. Chemical stability

Combustible liquid. Stable under normal conditions. Risk of explosion if heated under confinement. Heating may cause a fire or explosion.

10.3. Possibility of hazardous reactions

Refer to section 10.1 on Reactivity.

10.4. Conditions to avoid

Refer to Section 10 on Incompatible Materials. Open flame. Overheating. Sparks.

10.5. Incompatible materials

Oxidizing agents.

10.6. Hazardous decomposition products

Thermal decomposition produces: CO, CO₂, Oxides of nitrogen and other potentially toxic fumes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Dermal: Harmful in contact with skin. Inhalation:dust,mist: Harmful if inhaled.

bromacil (314-40-9)	
LD50 oral rat	5200 mg/kg (Rat)
LD50 dermal rat	> 2500 mg/kg (Rat)
LD50 dermal rabbit	> 5000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	> 4.8 mg/l/4h (Rat)
ATE CLP (oral)	5200.000 mg/kg body weight
naphthalene (91-20-3)	
LD50 oral rat	> 1100 mg/kg (Rat)
LD50 dermal rat	> 2500 mg/kg (Rat)
LD50 dermal rabbit	> 20000 mg/kg (Rabbit)
ATE CLP (oral)	500.000 mg/kg body weight
Glycol Ether EB (111-76-2)	
LD50 oral rat	1300 mg/kg
LD50 dermal rat	> 2000 mg/kg
ATE CLP (oral)	1300.000 mg/kg body weight
ATE CLP (dermal)	1100.000 mg/kg body weight

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Glycol Ether EB (111-76-2)	
ATE CLP (dust, mist)	1.500 mg/l/4h

2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4)	
LD50 oral rat	896 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	> 5.4 mg/l/4h (Rat)

Petroleum Solvent (68476-34-6)	
LD50 oral rat	> 7600 mg/kg
LD50 dermal rat	> 4300 mg/kg
LC50 inhalation rat (mg/l)	4.1 mg/l

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: May cause cancer.

naphthalene (91-20-3)	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	3 - Reasonably anticipated to be Human Carcinogen

Glycol Ether EB (111-76-2)	
IARC group	3 - Not classifiable

Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: May cause drowsiness or dizziness.
Specific target organ toxicity – repeated exposure	: May cause damage to organs (liver, thymus, bone marrow) through prolonged or repeated exposure.

Glycol Ether EB (111-76-2)	
NOAEL (oral,rat,90 days)	see comments
NOAEL (dermal,rat/rabbit,90 days)	see comments

Aspiration hazard	: May be fatal if swallowed and enters airways.
Symptoms/effects after inhalation	: Harmful if inhaled. May cause drowsiness or dizziness.
Symptoms/effects after skin contact	: Causes skin irritation. Harmful in contact with skin.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be fatal if swallowed and enters airways.
Likely routes of exposure	: Skin and eye contact;Ingestion;Inhalation

SECTION 12: Ecological information

12.1. Toxicity

bromacil (314-40-9)	
LC50 fish 1	75 mg/l (LC50; 48 h)

naphthalene (91-20-3)	
EC50 Daphnia 1	2.16 mg/l (EC50; 48 h; Daphnia magna)
LC50 fish 2	0.11 mg/l (LC50; 96 h; Oncorhynchus mykiss)
Threshold limit algae 1	0.4 mg/l (EC50; 72 h; Skeletonema costatum)

Glycol Ether EB (111-76-2)	
LC50 fish 1	1474 mg/l Oncorhynchus mykiss
EC50 Daphnia 1	100 mg/l Water flea
ErC50 (algae)	1840 mg/l Pseudokirchneriella subcapitata
NOEC chronic fish	> 100 mg/l
NOEC chronic crustacea	100 mg/l daphnid

12.2. Persistence and degradability

bromacil (314-40-9)	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil. Photodegradation in the air.

naphthalene (91-20-3)	
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naphthalene (91-20-3)	
Persistence and degradability	Readily biodegradable in water. Forming sediments in water. Biodegradable in the soil. Adsorbs into the soil. Photolysis in the air.
Biochemical oxygen demand (BOD)	0 g O ₂ /g substance
Chemical oxygen demand (COD)	0.22 g O ₂ /g substance
ThOD	2.99 g O ₂ /g substance

12.3. Bioaccumulative potential

bromacil (314-40-9)	
BCF fish 1	2.8 - 26.5 (BCF; 672 h; Leuciscus idus)
BCF fish 2	4.25 (BCF; 388 h; Pimephales promelas)
Log Pow	2.11
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
naphthalene (91-20-3)	
BCF fish 1	23 - 168 (BCF; 8 weeks; Cyprinus carpio)
Log Pow	3.3 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4)	
Log Pow	5.78 (Experimental value)

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations	: Dispose of contents/container to comply with local/regional/national regulations.
Additional information	: Clean up even minor leaks or spills if possible without unnecessary risk. Handle empty containers with care because residual vapors are flammable.

SECTION 14: Transport information

Department of Transportation (DOT)

Transport document description	: NA1993 Combustible liquid, n.o.s. (Aliphatic Hydrocarbon), 3, III
UN-No.(DOT)	: NA1993
Proper Shipping Name (DOT)	: Combustible liquid, n.o.s.
Class (DOT)	: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Packing group (DOT)	: III - Minor Danger
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203
DOT Packaging Bulk (49 CFR 173.xxx)	: 241
DOT Symbols	: D - Proper shipping name for domestic use only, or to and from Canada, G - Identifies PSN requiring a technical name
DOT Special Provisions (49 CFR 172.102)	: IB3,T1,T4,TP1
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 220 L
DOT Vessel Stowage Location	: A

Additional information

Emergency Response Guide (ERG) Number	: 128
Other information	: When transported by ground in non-bulk containers, this product utilizes the exception found under 49 CFR 173.150.

ADR

No additional information available

Transport by sea

No additional information available

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Air transport

No additional information available

SECTION 15: Regulatory information

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

bromacil	CAS-No. 314-40-9	0.93 - 1.03%
naphthalene	CAS-No. 91-20-3	0 - 0.25%
2-ethylhexyl 2,4-dichlorophenoxyacetate	CAS-No. 1928-43-4	0.98 - 1.20%
Glycol Ether EB	CAS-No. 111-76-2	10 - 30 %

bromacil (314-40-9)

Subject to reporting requirements of United States SARA Section 313

naphthalene (91-20-3)

Subject to reporting requirements of United States SARA Section 313

CERCLA RQ

100 lb

2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4)

Subject to reporting requirements of United States SARA Section 313

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets and for work place labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Caution: Harmful if absorbed through the skin. Avoid contact with skin, eyes or clothing.

California Proposition 65 - This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer and/or reproductive toxicity

SECTION 16: Other information

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

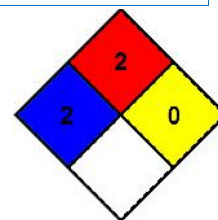
Full text of H-phrases:

H226	Flammable liquid and vapor
H227	Combustible liquid
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H336	May cause drowsiness or dizziness
H350	May cause cancer
H351	Suspected of causing cancer
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 2 - Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Prepared by: Technical Department

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. No warranty is expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. Our company assumes no responsibility for personal injury or property damage to the vendee, users or third parties caused by the material. Such vendees or users assume all risks associated with the use of this material.