



FINALE® HERBICIDE

Version 3.0 / USA
102000004004

1/11
Revision Date: 07/14/2014
Print Date: 03/14/2016

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

Product identifier

Trade name FINALE® HERBICIDE

Product code (UVP) 05950643

SDS Number 102000004004

EPA Registration No. 432-1229

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

Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
United States

Emergency Telephone Number (24hr/ 7 days) 1-800-334-7577

Product Information Telephone Number

SDS Information or Request SDSINFO.BCS-NA@bayer.com

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

Reproductive toxicity : Category 1B

Specific target organ toxicity - repeated exposure : Category 2

Eye irritation : Category 2A

Acute toxicity (Inhalation): Category 4



Signal word: Danger

Hazard statements

May damage fertility or the unborn child.

May cause damage to organs (nervous system) through prolonged or repeated exposure.

Causes serious eye irritation.

Harmful if inhaled.



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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.
Do not breathe spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
IF exposed or concerned: Get medical advice/attention.
Get medical advice/attention if you feel unwell.
IF IN EYES: 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.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor/physician if you feel unwell.
Store locked up.
Dispose of contents/container in accordance with local regulation.

Other hazards

No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Glufosinate ammonium	77182-82-2	11.33
Sodium alkyl ether sulphate	68585-34-2	12.70
1-Methoxy-2-propanol	107-98-2	10.00

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



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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 Gastrointestinal disturbance, Tremors, Convulsions, Drowsiness, Diarrhoea, Vomiting, Nausea, muscular weakness, Tachycardia, Respiratory failure, Unconsciousness, Coma
Symptoms may be delayed.

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. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Carbon dioxide (CO₂), Foam, Water spray, Dry powder

Unsuitable None known.

Special hazards arising from the substance or mixture In the event of fire the following may be released: Hydrogen cyanide (hydrocyanic acid), Carbon monoxide (CO), Oxides of phosphorus, Nitrogen oxides (NO_x)

Advice for firefighters

Special protective equipment for fire-fighters Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information Fight fire from upwind position. Keep out of smoke. Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Whenever possible, contain fire-fighting water by diking area with sand or earth. Do not allow run-off from fire fighting to enter drains or water courses.

Flash point > 100 °C

Autoignition temperature no data available

Lower explosion limit no data available

Upper explosion limit no data available

Explosivity not applicable



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SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

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

Methods and materials for containment and cleaning up

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal. Do not allow product to contact non-target plants.

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 Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation. Handle and open container in a manner as to prevent spillage.

Advice on protection against fire and explosion Keep away from heat and sources of ignition.

Hygiene measures Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

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

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
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Glufosinate ammonium	77182-82-2	0.9 mg/m3 (TWA)		OES BCS*
Sodium alkyl ether sulphate (Particulate.)	68585-34-2	5ug/m3 (AN ESL)	02 2013	TX ESL
Sodium alkyl ether sulphate (Particulate.)	68585-34-2	50ug/m3 (ST ESL)	02 2013	TX ESL
1-Methoxy-2-propanol	107-98-2	50 ppm (TWA)	02 2013	ACGIH
1-Methoxy-2-propanol	107-98-2	100 ppm (STEL)	02 2013	ACGIH
1-Methoxy-2-propanol	107-98-2	360 mg/m3/100 ppm (REL)	2010	NIOSH
1-Methoxy-2-propanol	107-98-2	540 mg/m3/150 ppm (STEL)	2010	NIOSH
1-Methoxy-2-propanol	107-98-2	360 mg/m3/100 ppm (TWA)	1989	OSHA Z1A
1-Methoxy-2-propanol	107-98-2	540 mg/m3/150 ppm (STEL)	1989	OSHA Z1A
1-Methoxy-2-propanol	107-98-2	380 mg/m3/100 ppm (TWA)	06 2008	TN OEL
1-Methoxy-2-propanol	107-98-2	540 mg/m3/150 ppm (STEL)	06 2008	TN OEL
1-Methoxy-2-propanol	107-98-2	1000ppb (ST ESL)	07 2011	TX ESL
1-Methoxy-2-propanol	107-98-2	3700ug/m3 (ST ESL)	07 2011	TX ESL
1-Methoxy-2-propanol	107-98-2	370ug/m3 (AN ESL)	07 2011	TX ESL
1-Methoxy-2-propanol	107-98-2	100ppb (AN ESL)	07 2011	TX ESL
1-Methoxy-2-propanol	107-98-2	540 mg/m3/150 ppm (STEL)	08 2010	US CA OEL
1-Methoxy-2-propanol	107-98-2	360 mg/m3/100 ppm (TWA PEL)	08 2010	US CA OEL

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

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

Chemical-resistant gloves (barrier laminate, butyl rubber, nitrile rubber or Viton)



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Eye protection	Tightly fitting safety goggles
Skin and body protection	Wear long-sleeved shirt and long pants and shoes plus socks.
General protective measures	Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry. Eye wash facility and safety shower should be available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	blue
Physical State	Liquid
Odor	weakly pungent
Odour Threshold	no data available
pH	5.5 - 7.5 at 100 %
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Density	ca. 1.06 g/cm ³ at 20 °C
Evaporation rate	no data available
Boiling Point	no data available
Melting / Freezing Point	no data available
Water solubility	soluble
Minimum Ignition Energy	not applicable
Decomposition temperature	not applicable
Partition coefficient: n-octanol/water	no data available
Viscosity	no data available
Flash point	> 100 °C
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Explosivity	not applicable



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SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition	not applicable
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	Bases
Hazardous decomposition products	Ammonia

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Eye contact, Inhalation, Skin Absorption, Ingestion
Immediate Effects	
Eye	Causes substantial but temporary eye injury. May cause severe eye irritation.
Skin	Harmful if absorbed through skin. May cause slight irritation.
Ingestion	Harmful if swallowed.
Inhalation	Harmful if inhaled.
Information on toxicological effects	
Acute oral toxicity	LD50 (male/female combined rat) 3,570 mg/kg
Acute inhalation toxicity	LC50 (female rat) 4.14 mg/l Exposure time: 4 h Determined in the form of liquid aerosol.
Acute dermal toxicity	LD50 (rat) > 2,000 mg/kg
Skin irritation	Slight irritation (rabbit)
Eye irritation	Severe eye irritation. (rabbit)
Sensitisation	Non-sensitizing. (guinea pig)

Assessment repeated dose toxicity

Glufosinate-ammonium caused neurobehavioral effects and/or neuropathological changes in animal studies. Glufosinate-ammonium was well tolerated in rats and mice but less well tolerated in the dog in subchronic studies.

Assessment Mutagenicity

Glufosinate-ammonium was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.



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Assessment Carcinogenicity

Glufosinate-ammonium was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH

1-Methoxy-2-propanol 107-98-2 Group A4

NTP

None.

IARC

None.

OSHA

None.

Assessment toxicity to reproduction

Implantation loss occurred in a rat multigeneration study with Glufosinate-ammonium. There were no effects on male fertility.

Assessment developmental toxicity

Glufosinate-ammonium caused developmental toxicity only at dose levels toxic to the dams.
Glufosinate-ammonium caused an increased incidence of post implantation losses.

Further information

Only acute toxicity studies have been performed on the formulated product.
The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

Biodegradability	Glufosinate-ammonium: ; not rapidly biodegradable
Koc	Glufosinate-ammonium: Koc: 2.3
Bioaccumulation	Glufosinate-ammonium: Bioconcentration factor (BCF) < 1; Does not bioaccumulate.
Mobility in soil	Glufosinate-ammonium: Highly mobile in soils
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. Drift or runoff from treated areas may adversely affect non-target plants. Apply this product as specified on the label.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods



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Product	Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility. Dispose in accordance with all local, state/provincial and federal regulations.
Contaminated packaging	Do not use containers for other products. Triple rinse containers. Puncture container to avoid re-use. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning. 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

According to national and international transport regulations this material is not classified as dangerous goods / hazardous material.

Freight Classification: COMPOUNDS, TREE OR WEEDKILLING, N.O.I., other than poison; HAVING A DENSITY OF GREATER THAN 20 LBS. PER CUBIC FOOT

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 432-1229

US Federal Regulations

TSCA list

Sodium alkyl ether sulphate	68585-34-2
1-Methoxy-2-propanol	107-98-2

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.

Bayer Environmental Science

SAFETY DATA SHEET



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Canadian Regulations

Canadian Domestic Substance List

Sodium alkyl ether sulphate	68585-34-2
1-Methoxy-2-propanol	107-98-2

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

International Regulations

European Inventory of Existing Commercial Substances (EINECS)

1-Methoxy-2-propanol	107-98-2
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EPA/FIFRA Information:

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 workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word: Warning!

Hazard statements: Causes substantial but temporary eye injury.
Harmful if swallowed, inhaled or absorbed through the skin.
Avoid contact with skin, eyes and clothing.
Avoid inhalation of vapour or mist.

SECTION 16: OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2	Flammability - 1	Instability - 0	Others - none
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HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 2	Flammability - 1	Physical Hazard - 0	PPE -
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0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: Revised according to the current OSHA Hazard Communication Standard (29CFR1910.1200)

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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

Bayer Environmental Science
SAFETY DATA SHEET



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