

SAFETY DATA SHEET



BUTEO® START

Version 8.0 / USA
102000022677

1/12

Revision Date: 06/22/2026
Print Date: 06/23/2026

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

Product identifier

Trade name	BUTEO® START
Product code (UVP)	79911750
SDS Number	102000022677
EPA Registration No.	264-1142

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

Use	Seed treatment, Insecticide
Restrictions on use	See product label for restrictions.
Information on supplier	
Supplier	Bayer CropScience LLC 800 North Lindbergh Blvd. St. Louis, MO 63167 USA
Responsible Department	Email: SDSINFO.BCS-NA@bayer.com

Emergency telephone no.

Emergency Telephone Number (24hr/ 7 days)	1-800-334-7577
Product Information Telephone Number	1-866-99BAYER (1-866-992-2937)

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

Acute toxicity(Oral): Category 4
Specific target organ toxicity - repeated exposure: Category 2

Labelling in accordance with regulation HCS 29CFR §1910.1200



Signal word: Warning

Hazard statements

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Harmful if swallowed.

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

Precautionary statements

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Do not breathe gas/ mist/vapours/ spray.

IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.

Rinse mouth.

Get medical advice/ attention if you feel unwell.

Dispose of contents/container in accordance with local regulation.

Hazards Not Otherwise Classified (HNOC)

No physical hazards not otherwise classified.

No health hazards not otherwise classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Flupyradifurone	951659-40-8	40.68

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	To date no symptoms are known.
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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.
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SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
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Unsuitable	High volume water jet
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Special hazards arising from the substance or mixture	In the event of fire the following may be released: Hydrogen chloride (HCl), Hydrogen cyanide (hydrocyanic acid), Hydrogen fluoride, Carbon monoxide (CO), Nitrogen oxides (NOx)
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Advice for firefighters

Special protective equipment for firefighters	In the event of fire and/or explosion do not breathe fumes. Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.
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Further information	Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.
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Specific hazards from the substance or mixture which can increase the fire

Flash point	> 100 °C / > 212 °F No flash point - Determination conducted up to the boiling point.
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Auto-ignition temperature	445 °C / 833 °F
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Lower explosion limit	No data available
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Upper explosion limit	No data available
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Explosivity	Not explosive 92/69/EEC, A.14 / OECD 113
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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 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. If the product is accidentally spilled, do not allow to enter soil, waterways or waste water canal.

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 Use only in area provided with appropriate exhaust ventilation. Handle and open container in a manner as to prevent spillage.

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. 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. Protect from freezing. Keep away from direct sunlight.

Advice on common storage Keep away from food, drink and animal feedingstuffs.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Flupyradifurone	951659-40-8	2.2 mg/m3		OES BCS*

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*OES BCS: Internal Bayer AG, Crop Science Division "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)
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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Form	suspension
Colour	beige to light pink
Odour	characteristic
Odour Threshold	No data available
pH	4.0 - 7.5 (100 %) (23 °C)
Melting point/ range	No data available
Boiling Point	No data available
Flash point	> 100 °C / > 212 °F No flash point - Determination conducted up to the boiling point.
Flammability	No data available
Auto-ignition temperature	445 °C / 833 °F
Thermal decomposition	No data available
Minimum ignition energy	Not applicable

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Self-accelarating decomposition temperature (SADT)	No data available
Upper explosion limit	No data available
Lower explosion limit	No data available
Vapour pressure	No data available
Evaporation rate	No data available
Relative vapour density	No data available
Relative density	No data available
Density	ca. 1.18 g/cm ³ (20 °C)
Water solubility	dispersible
Partition coefficient: n-octanol/water	Flupyradifurone: log Pow: 1.2
Viscosity, dynamic	No data available
Viscosity, kinematic	No data available
Surface tension	31 mN/m (25 °C) Determined in the undiluted form.
Oxidizing properties	No oxidizing properties
Explosivity	Not explosive 92/69/EEC, A.14 / OECD 113
Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	No incompatible materials known.
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

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SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Ingestion, Inhalation, Eye contact, Skin contact
Immediate Effects	
Eye	May cause temporary eye irritation.
Skin	May be harmful in contact with skin. May cause sensitisation by skin contact.
Ingestion	Harmful if swallowed.
Inhalation	Not expected to produce significant adverse effects when recommended use instructions are followed.

Information on toxicological effects

Acute oral toxicity	LD50 (female Rat) 1,030 mg/kg
Acute inhalation toxicity	LC50 (male/female combined Rat) > 5.04 mg/l Exposure time: 4 h Determined in the form of liquid aerosol.
Acute dermal toxicity	LD50 (male/female combined Rat) > 5,000 mg/kg
Skin corrosion/irritation	Slight irritant effect - does not require labelling. (Rabbit)
Serious eye damage/eye irritation	Slight irritant effect - does not require labelling. (Rabbit)
Respiratory or skin sensitisation	Skin: Non-sensitizing. (Mouse) OECD Test Guideline 429, local lymph node assay (LLNA)

Assessment STOT Specific target organ toxicity – single exposure

Flupyradifurone: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure

Flupyradifurone: May cause damage to organs (muscle) through prolonged or repeated exposure.

Assessment mutagenicity

Flupyradifurone was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Flupyradifurone was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH (US)

None.

NTP (US)

None.

IARC (US)

None.

Assessment toxicity to reproduction

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Flupyradifurone did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Flupyradifurone did not cause developmental toxicity in rats and rabbits.

Aspiration hazard

Based on available data, the classification criteria are not met.

Further information

Only acute toxicity studies have been performed on the formulated product.

The non-acute information pertains to the active ingredient(s).

No further toxicological information is available.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish

LC50 (Oncorhynchus mykiss (rainbow trout)) > 74.2 mg/l

Exposure time: 96 h

The value mentioned relates to the active ingredient flupyradifurone.

No acute toxicity was observed at its limit of water solubility.

Toxicity to aquatic invertebrates

EC50 (Daphnia magna (Water flea)) > 77.6 mg/l

Exposure time: 48 h

The value mentioned relates to the active ingredient flupyradifurone.

No acute toxicity was observed at its limit of water solubility.

EC50 (Chironomus riparius (non-biting midge)) 0.0617 mg/l

Exposure time: 48 h

The value mentioned relates to the active ingredient flupyradifurone.

Toxicity to aquatic plants

IC50 (Raphidocelis subcapitata (freshwater green alga)) > 80 mg/l

Growth rate; Exposure time: 72 h

The value mentioned relates to the active ingredient flupyradifurone.

No acute toxicity was observed at its limit of water solubility.

Toxicity to bacteria

EC50 (activated sludge) > 1,000 mg/l

Exposure time: 3 h

The value mentioned relates to the active ingredient flupyradifurone.

Biodegradability

Flupyradifurone:

Not rapidly biodegradable

Koc

Flupyradifurone: Koc: 93

Bioaccumulation

Flupyradifurone:

Does not bioaccumulate.

Mobility in soil

Flupyradifurone: very mobile in soil

Results of PBT and vPvB assessment

PBT and vPvB assessment

Flupyradifurone: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be

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	very persistent and very bioaccumulative (vPvB).
Additional ecological information	No other effects to be mentioned.
Environmental precautions	Do not allow to get into surface water, drains and ground water. 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.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	Dispose in accordance with all local, state/provincial and federal regulations.
Contaminated packaging	Consult state and local regulations regarding the proper disposal of container. Follow advice on product label and/or leaflet.
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. (FLUPYRADIFURONE SOLUTION)
IATA	
UN number	3082
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLUPYRADIFURONE SOLUTION)

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.

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Freight Classification: INSECTICIDES OR FUNGICIDES O/T POISON
INSECTICIDES OR FUNGICIDES, N.O.I., OTHER THAN
POISON

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 264-1142

US Federal Regulations

TSCA list

Water 7732-18-5

Urea 57-13-6

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

No export notification needs to be made.

SARA Title III - Section 302 - Notification and Information

Not applicable.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting

CA Prop65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

US State Right-To-Know Ingredients

Urea 57-13-6 MN

Environmental

CERCLA

None.

Clean Water Section 307(a)(1)

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

EPA/FIFRA Information:

This chemical is a pesticide product regulated 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:

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Signal word:	Caution!
Hazard statements:	Harmful if swallowed. Harmful if absorbed through skin. Causes moderate eye irritation. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

49CFR	Code of Federal Regulations, Title 49
ACGIH	US. ACGIH Threshold Limit Values
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
N.O.S.	Not otherwise specified
NTP	US. National Toxicology Program (NTP) Report on Carcinogens
OECD	Organization for Economic Co-operation and Development
TDG	Transportation of Dangerous Goods
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Instability - 0 Others - none

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

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

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

Reason for Revision: The following sections have been revised: Section 11: Toxicological Information.
Section 16: Other Information. Reviewed and updated for general editorial purposes.

Revision Date: 06/22/2026

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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

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