

SAFETY DATA SHEET



LANDMASTER® II HERBICIDE

Version 2.0 / USA
102000040192

1/13
Revision Date: 11/04/2020
Print Date: 11/05/2020

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

Product identifier

Trade name LANDMASTER® II HERBICIDE
Product code (UVP) 62290267
SDS Number 102000040192
EPA Registration No. 524-376

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

Use Herbicide
Restrictions on use See product label for restrictions.

Information on supplier

Supplier Bayer CropScience LP
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

Serious eye damage: Category 1
Acute toxicity(Inhalation): Category 4
Reproductive toxicity: Category 1B
Specific target organ toxicity - repeated exposure: Category 2

Labelling in accordance with regulation HCS 29CFR §1910.1200



Signal word: Danger

Hazard statements

SAFETY DATA SHEET



LANDMASTER® II HERBICIDE

Version 2.0 / USA
102000040192

2/13
Revision Date: 11/04/2020
Print Date: 11/05/2020

Harmful if inhaled.
Causes serious eye damage.
May damage fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.

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 protect
Do not breathe gas/ mist/vapours/ spray.
Use only outdoors or in a well-ventilated area.
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/doctor/ physician.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor/physician if you feel unwell.
IF exposed or concerned: Get medical advice/ attention.
Store locked up.
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
Isopropylamine salt of glyphosate	38641-94-0	13.3
2,4-D Isopropylamine Salt	5742-17-6	11.1
Ethoxylated tallow alkyl amines	61791-26-2	>15.0 – <40.0
N-Methyl-2-pyrrolidone	872-50-4	>0.5 – <5.0

The specific chemical identity and/or concentration range is being withheld because it is trade secret information.

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

SAFETY DATA SHEET



LANDMASTER® II HERBICIDE

Version 2.0 / USA
102000040192

3/13
Revision Date: 11/04/2020
Print Date: 11/05/2020

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.
Indication of any immediate medical attention and special treatment needed	
Risks	This product is not a cholinesterase inhibitor.
Treatment	Treatment with atropine and oximes is not indicated. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable High volume water jet

Special hazards arising from the substance or mixture In the event of fire the following may be released: Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x), Oxides of phosphorus

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. Equipment should be thoroughly decontaminated after use.

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.

Flash point does not flash

Auto-ignition temperature No data available

Lower explosion limit No data available

Upper explosion limit No data available

Explosivity Not explosive

SAFETY DATA SHEET



LANDMASTER® II HERBICIDE

Version 2.0 / USA
102000040192

4/13
Revision Date: 11/04/2020
Print Date: 11/05/2020

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Use personal protective equipment. 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. Keep in suitable, closed containers for disposal. 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. 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 Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

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. Keep working clothes separately. Garments that cannot be cleaned must be destroyed (burnt).

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Store in original container. 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 a place accessible by authorized persons only. Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode. Protect from freezing. Partial crystallization may occur on prolonged storage below the minimum storage temperature. Freezing will affect the physical condition but will not damage the material. Thaw and mix before using.

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

SAFETY DATA SHEET



LANDMASTER® II HERBICIDE

Version 2.0 / USA
10200040192

5/13
Revision Date: 11/04/2020
Print Date: 11/05/2020

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
N-Methyl-2-pyrrolidone	872-50-4	4 mg/m ³ /1 ppm (TWA PEL)	10 2014	US CA OEL
N-Methyl-2-pyrrolidone	872-50-4	40 mg/m ³ /10 ppm (TWA)	2010	WEEL
N-Methyl-2-pyrrolidone	872-50-4	19 ppm (TWA)		OES BCS*

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

Biological occupational exposure limits

Components	CAS-No.	Parameters	Biological specimen	Sampling time	Conc.	Basis
N-Methyl-2-pyrrolidone	872-50-4	5-Hydroxy-N-methyl-2-pyrrolidone	Urine	Sampling time: End of shift.	100 mg/l	ACGIH BEI

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

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
Chemical-resistant gloves (barrier laminate, butyl rubber, nitrile rubber or Viton)
Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

Eye protection

Use tightly sealed goggles and face protection.

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.

SAFETY DATA SHEET



LANDMASTER® II HERBICIDE

Version 2.0 / USA
102000040192

6/13
Revision Date: 11/04/2020
Print Date: 11/05/2020

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Form	Liquid, clear
Colour	light yellow to amber
Odour	slight
Odour Threshold	No data available
pH	5.8 - 6.1 (5.4 %)
Freezing temperature	-12 °C
Boiling Point	No data available
Flash point	does not flash
Flammability	No data available
Auto-ignition temperature	No data available
Minimum ignition energy	Not applicable
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. 1.10 g/cm ³ (20 °C)
Water solubility	soluble
Partition coefficient: n-octanol/water	Glyphosate: log Pow: -3.2
Viscosity, dynamic	No data available
Viscosity, kinematic	No data available
Oxidizing properties	No oxidizing properties
Explosivity	Not explosive
Other information	Further safety related physical-chemical data are not known.

SAFETY DATA SHEET



LANDMASTER® II HERBICIDE

Version 2.0 / USA
102000040192

7/13
Revision Date: 11/04/2020
Print Date: 11/05/2020

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition	Stable under normal conditions.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.
Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	Galvanised steel, Unlined mild steel
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Eye contact, Ingestion
Immediate Effects	
Eye	May cause irreversible eye damage.
Skin	Not expected to produce significant adverse effects when recommended use instructions are followed.
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 (Rat) 4,081 mg/kg
Acute inhalation toxicity	LC50 (Rat) 3.8 mg/l Exposure time: 4 h Determined in the form of liquid aerosol.
Acute dermal toxicity	LD50 (Rabbit) > 5,000 mg/kg No deaths
Skin corrosion/irritation	No skin irritation (Rabbit)
Serious eye damage/eye irritation	Severe eye irritation. (Rabbit)
Respiratory or skin sensitisation	Skin: Non-sensitizing. (Guinea pig) OECD Test Guideline 406, Buehler test
Assessment STOT Specific target organ toxicity – single exposure	

Glyphosate: Based on available data, the classification criteria are not met.
N-methyl-2-pyrrolidone: May cause respiratory irritation.

SAFETY DATA SHEET



LANDMASTER® II HERBICIDE

Version 2.0 / USA
10200040192

9/13
Revision Date: 11/04/2020
Print Date: 11/05/2020

	flow-through test; Exposure time: 96 h Test conducted with a similar formulation.
	LC50 (<i>Lepomis macrochirus</i> (Bluegill sunfish)) 1,700 mg/l flow-through test; Exposure time: 96 h The value mentioned relates to the active ingredient 2,4-D.
	LC50 (<i>Oncorhynchus mykiss</i> (rainbow trout)) 2,840 mg/l static test; Exposure time: 96 h The value mentioned relates to the active ingredient 2,4-D.
Chronic toxicity to fish	<i>Oncorhynchus mykiss</i> (rainbow trout) flow-through test NOEC: ≥ 9.63 mg/l The value mentioned relates to the active ingredient glyphosate.
Toxicity to aquatic invertebrates	EC50 (<i>Daphnia magna</i> (Water flea)) 11 mg/l static test; Exposure time: 48 h Test conducted with a similar formulation.
	EC50 (<i>Daphnia magna</i> (Water flea)) 583 mg/l static test; Exposure time: 48 h The value mentioned relates to the active ingredient 2,4-D.
Chronic toxicity to aquatic invertebrates	EC50 (<i>Daphnia magna</i> (Water flea)): 12.5 mg/l Exposure time: 21 d The value mentioned relates to the active ingredient glyphosate.
Toxicity to aquatic plants	EC50 (<i>Raphidocelis subcapitata</i> (freshwater green alga)) 2.6 mg/l static test; Exposure time: 96 h Test conducted with a similar formulation.
	EC50 (<i>Raphidocelis subcapitata</i> (freshwater green alga)) 43.4 mg/l static test; Exposure time: 120 h The value mentioned relates to the active ingredient 2,4-D.
Biodegradability	Glyphosate: Not rapidly biodegradable
Koc	Glyphosate: Koc: 6920
Bioaccumulation	Glyphosate: Does not bioaccumulate.
Mobility in soil	Glyphosate: Immobile in soil
Results of PBT and vPvB assessment	
PBT and vPvB assessment	Glyphosate: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).
Additional ecological information	No further ecological information is available.
Environmental precautions	Apply this product as specified on the label. Do not apply directly to water, to areas where surface water is present

SAFETY DATA SHEET



LANDMASTER® II HERBICIDE

Version 2.0 / USA
10200040192

10/13
Revision Date: 11/04/2020
Print Date: 11/05/2020

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.
Retain and dispose of contaminated wash water.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines.
Do not contaminate water, food, or feed by disposal.
Follow all local/regional/national/international regulations.

Contaminated packaging Follow advice on product label and/or leaflet.
Do not re-use empty containers.
Triple rinse containers.
Puncture container to avoid re-use.
Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities.
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

UN number	3082
Class	9
Packaging group	III
Marine pollutant	Marine pollutant
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (2,4-DICHLOROPHENOL SALT)
RQ	Reportable Quantity is reached with 900 lb of product.

IMDG

UN number	3082
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,4- DICHLOROPHENOL SALT SOLUTION)

SAFETY DATA SHEET



LANDMASTER® II HERBICIDE

Version 2.0 / USA
10200040192

11/13
Revision Date: 11/04/2020
Print Date: 11/05/2020

IATA

UN number	3082
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,4- DICHLOROPHENOL SALT 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.

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 524-376

US Federal Regulations

TSCA list

Water	7732-18-5
Ethoxylated tallow alkyl amines	61791-26-2
2-Aminopropane	75-31-0

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 substances known to the State of California to cause cancer.

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

N-Methyl-2-pyrrolidone	872-50-4	Developmental toxin.
Ethanediol	107-21-1	Developmental toxin.

US State Right-To-Know Ingredients

2,4-D Isopropylamine Salt	5742-17-6	CT, IL
2-Aminopropane	75-31-0	CA, CT, MN, NJ, RI

Environmental

CERCLA

Yes

2,4-D Isopropylamine Salt	5742-17-6
---------------------------	-----------

Clean Water Section 307(a)(1)

None.

SAFETY DATA SHEET



LANDMASTER® II HERBICIDE

Version 2.0 / USA
10200040192

12/13
Revision Date: 11/04/2020
Print Date: 11/05/2020

Safe Drinking Water Act Maximum Contaminant Levels

Yes	
N-Methyl-2-pyrrolidone	872-50-4
Yes	
Ethenediol	107-21-1

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:	Danger!
Hazard statements:	Corrosive Causes irreversible eye damage. Harmful if swallowed.

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 - 1	Others - none
------------	------------------	-----------------	---------------

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

Health - 2	Flammability - 1	Physical Hazard - 1	PPE -
------------	------------------	---------------------	-------

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

SAFETY DATA SHEET



LANDMASTER® II HERBICIDE

Version 2.0 / USA
102000040192

13/13
Revision Date: 11/04/2020
Print Date: 11/05/2020

Reason for Revision: New Safety Data Sheet.

Revision Date: 11/04/2020

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 registered trademarks of Bayer.