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

1.1 Product identifier

Trade name	SAMURAI
Product code (UVP)	86789574
UFI	KPF1-E0Y7-K009-RH2Q (for Northern Ireland only) (voluntary notification)

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

Use	Herbicide

1.3 Details of the supplier of the safety data sheet

Supplier	Bayer CropScience Limited 230 Cambridge Science Park Milton Road Cambridge Cambridgeshire CB4 0WB United Kingdom
Telephone	+44(0)1223 226500
Telefax	+44(0)1223 426240
Responsible Department	Email: gb-bcs-crop-regulatory-affairs@bayer.com
FOR IRELAND & NORTHERN IRELAND:	Bayer CropScience Ltd Bayer Ltd 1st Floor, The Grange Offices The Grange, Brewery Road Stillorgan Co. Dublin A94 H2K7 Ireland
Telephone	+353 1 216 3300

1.4 Emergency telephone no.

Emergency telephone no.	00800 1020 3333 (24 hr) (not available on non-contract mobile phones)
For Medical Professionals:	You can also contact the relevant NPIS.
For Members of the Public:	You can also contact NHS111 (for GB) or your local GP (for Northern Ireland).
National Poisons Information Centre Dublin	+353-1-809 2166 (available from 8 am to 10 pm every day)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Eye irritation: Category 2
H319 Causes serious eye irritation.

Classification according to specific UK regulations:

Eye irritation: Category 2
H319 Causes serious eye irritation.

2.2 Label elements

Labelling in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Hazard label for supply/use required.



Signal word: Warning

Hazard statements

H319	Causes serious eye irritation.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary statements

P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P501	Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

2.3 Other hazards

No additional hazards known beside those mentioned.

Potassium salt of 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).

Ecological information:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Toxicological information:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission

Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature

Soluble concentrate (SL)
Potassium salt of Glyphosate 441 g/l

Hazardous components

Hazard statements according to Regulation (EC) No. 1272/2008

Name	CAS-No. / EC-No. / REACH Reg. No.	Classification REGULATION (EC) No 1272/2008	Conc. [%]
Potassium salt of glyphosate	70901-12-1		35.5
Fatty alkyl ether alkyl amine ethoxylate	68478-96-6	Acute Tox. 4, H302 Eye Dam. 1, H318 Aquatic Chronic 2, H411	> 1 – < 10

Further information

For the full text of the H-Statements mentioned in this Section, see Section 16.

Particle characteristics

This substance/ mixture does not contain nanoforms

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.

Inhalation Move to fresh air. Keep patient warm and at rest. 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. Get medical attention if irritation develops and persists.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately. Rinse mouth.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	Skin, eye and mucous membrane irritation

4.3 Indication of any immediate medical attention and special treatment needed

Risks	This product is not a cholinesterase inhibitor.
Treatment	Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. Treatment with atropine and oximes is not indicated. There is no specific antidote.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable	High volume water jet
5.2 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 (NOx), Oxides of phosphorus

5.3 Advice for firefighters

Special protective equipment for firefighters	In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.
Further information	Contain the spread of the fire-fighting media. Do not allow water to come into direct contact with the product.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Precautions	Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.
6.2 Environmental precautions	Do not allow to get into surface water, drains and ground water.

6.3 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.
6.4 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

7.1 Precautions for safe handling

Advice on safe handling	Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.
Hygiene measures	Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. Wash hands immediately after work, if necessary take a shower. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).

7.2 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 frost. 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.
Suitable materials	HDPE (high density polyethylene) HDPE - steel case
7.3 Specific end use(s)	Refer to the label and/or leaflet.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

No known occupational limit values.

8.2 Exposure controls

Refer to COSHH assessment (Control of Substances Hazardous to Health (Amendment) Regulations 2004). Engineering controls should be used in preference to personal protective equipment wherever practicable. Refer also to COSHH Essentials.

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	Respiratory protection is not required under anticipated circumstances of exposure. Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.
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.
Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination outside cannot be removed.

Material	Nitrile rubber
Rate of permeability	> 480 min
Glove thickness	> 0.4 mm
Protective index	Class 6
Directive	Protective gloves complying with EN 374.

Eye protection Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

Skin and body protection Wear standard coveralls and Category 3 Type 6 suit.
If there is a risk of significant exposure, consider a higher protective type suit.
Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.
If chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	Liquid, clear to slightly turbid
Colour	yellow to amber
Odour	slight amine odour
Odour Threshold	No data available
Melting point/range	Not applicable
Boiling Point	No data available
Flammability	No data available
Upper explosion limit	No data available
Lower explosion limit	No data available
Flash point	does not flash
Auto-ignition temperature	No data available
Self-accelarating decomposition temperature (SADT)	No data available
pH	4.8 (10 g/l) (23 °C) (deionized water)
Viscosity, dynamic	8.0 mPa.s (20 °C)
Viscosity, kinematic	No data available

Water solubility	miscible
Partition coefficient: n-octanol/water	Potassium salt of glyphosate: log Pow: < -3.2 (25 °C)
Vapour pressure	No data available
Density	1.25 g/cm³ (20 °C)
Relative density	No data available
Relative vapour density	No data available
Assessment nano particles	This substance/ mixture does not contain nanoforms
Particle size	No data available

9.2 Other information

Explosivity	Not explosive
Oxidizing properties	No data available
Evaporation rate	No data available
Other physico-chemical properties	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions.
Self heating	not self-heating
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.
10.4 Conditions to avoid	Extremes of temperature and direct sunlight.
10.5 Incompatible materials	Unlined mild steel, Carbon steel, Galvanised steel Store only in the original container.
10.6 Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in regulation (EC) No 1272/2008

Acute oral toxicity	LD50 (Rat) > 5,000 mg/kg Test conducted with a similar formulation.
Acute inhalation toxicity	LC50 (Rat) > 5.05 mg/l Exposure time: 4 h Test conducted with a similar formulation.
Acute dermal toxicity	LD50 (Rat) > 5,000 mg/kg Test conducted with a similar formulation.
Skin corrosion/irritation	Slight irritant effect - does not require labelling. (Rabbit) Test conducted with a similar formulation.
Serious eye damage/eye irritation	Severe eye irritation. (Rabbit) Test conducted with a similar formulation.
Respiratory or skin sensitisation	Skin: Non-sensitizing. (Guinea pig) OECD Test Guideline 406, Buehler test Test conducted with a similar formulation.

Assessment STOT Specific target organ toxicity – single exposure

Potassium salt of glyphosate: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure

Potassium salt of glyphosate did not cause specific target organ toxicity in experimental animal studies.

Assessment mutagenicity

Potassium salt of glyphosate is not considered mutagenic.

Assessment carcinogenicity

Potassium salt of glyphosate: Based on available data, the classification criteria are not met.

Assessment toxicity to reproduction

Potassium salt of glyphosate: Based on available data, the classification criteria are not met.

Assessment developmental toxicity

Potassium salt of glyphosate: Based on available data, the classification criteria are not met.

Aspiration hazard

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

11.2 Information on other hazards

Endocrine disrupting properties

Assessment	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)) 28 mg/l static test; Exposure time: 96 h Test conducted with a similar formulation.
Toxicity to aquatic invertebrates	EC50 (Daphnia magna (Water flea)) 69 mg/l static test; Exposure time: 48 h Test conducted with a similar formulation.
Toxicity to aquatic plants	ErC50 (Desmodesmus subspicatus (green algae)) 14 mg/l static test; Exposure time: 72 h Test conducted with a similar formulation.
	NOEC (Desmodesmus subspicatus (green algae)) 2 mg/l static test; Exposure time: 72 h Test conducted with a similar formulation.
Toxicity to other organisms	LD50 (Apis mellifera (bees)) > 265 mcg/bee (contact) Exposure time: 48 h Test conducted with a similar formulation.
	LD50 (Apis mellifera (bees)) > 285 mcg/bee (oral) Exposure time: 48 h Test conducted with a similar formulation.
	LC50 (Eisenia fetida (earthworms)) > 2,700 mg/kg Exposure time: 14 d Test conducted with a similar formulation.

12.2 Persistence and degradability

Biodegradability	Potassium salt of glyphosate: Not readily biodegradable.
Koc	Potassium salt of glyphosate: Koc: 884

12.3 Bioaccumulative potential

Bioaccumulation	Potassium salt of glyphosate: Bioconcentration factor (BCF) < 1

12.4 Mobility in soil

Mobility in soil	Potassium salt of glyphosate: Variable, depends on temperature, soil type, soil moisture, soil pH and organic matter content.

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment	Potassium salt of 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).

12.6 Endocrine disrupting properties

Assessment	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Additional ecological information	No other effects to be mentioned.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product	In accordance with current regulations and, if necessary, after consultation with the site operator and/or with the responsible authority, the product may be taken to a waste disposal site or incineration plant.
Contaminated packaging	Triple rinse containers. Do not re-use empty containers. Not completely emptied packagings should be disposed of as hazardous waste.

SECTION 14: TRANSPORT INFORMATION

According to ADN/ADR/UK 'Carriage' Regulations/RID/IMDG/IATA not classified as dangerous goods.

This classification is in principle not valid for carriage by tank vessel on inland waterways. Please refer to the manufacturer for further information.

14.1 – 14.5 Not applicable.

14.6 Special precautions for user
See sections 6 to 8 of this Safety Data Sheet.

14.7 Transport in bulk according to IMO instruments
No transport in bulk according to the IBC Code.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

UK and Northern Ireland Regulatory References

This material may be subject to some or all of the following regulations (and any subsequent amendments). Users must ensure that any uses and restrictions as indicated on the label and/or leaflet are followed.

Transport

Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No 1348)
Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997 (SI 1997 No 2367)
Air Navigation Dangerous Goods Regulations 2002 (SI 2002 No 2786)

Supply and Use

Chemical (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No 716)
Chemical (Hazard Information and Packaging for Supply) (Northern Ireland) Regulations 2009
Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No 2677)
EH40 Occupational Exposure Limits - Table 1 List of approved workplace exposure limits
Control of Pesticide Regulations 1986
Dangerous Substances and Explosive Atmospheres Regulations 2002

Waste Treatment

Environmental Protection Act 1990, Part II
Environmental Protection (Duty of Care) Regulations 1991
The Waste Management Licensing Regulations 1994 (as amended)
Hazardous Waste Regulations 2005 (Replacing Special Waste Regulations 1996 as amended)
Landfill Directive
Regulation on Substances That Deplete the Ozone Layer 1994 (EEC/3093/94)
Water Resources Act 1991
Anti-Pollution Works Regulations 1999

Further information

WHO-classification: U (Unlikely to present acute hazard in normal use)

SECTION 16: OTHER INFORMATION

Text of the hazard statements mentioned in Section 3

H302	Harmful if swallowed.
H318	Causes serious eye damage.
H411	Toxic to aquatic life with long lasting effects.

Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
Conc.	Concentration
EC-No.	European community number
ECx	Effective concentration to x %
EH40 WEL	Worker Exposure Limit
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
EN	European Standard
EU	European Union
IATA	International Air Transport Association
IBC	International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
ICx	Inhibition concentration to x %
IMDG	International Maritime Dangerous Goods
LCx	Lethal concentration to x %
LDx	Lethal dose to x %
LOEC/LOEL	Lowest observed effect concentration/level
MARPOL	MARPOL: International Convention for the prevention of marine pollution from ships
N.O.S.	Not otherwise specified
NOEC/NOEL	No observed effect concentration/level
OECD	Organization for Economic Co-operation and Development
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SI	Statutory Instrument
TWA	Time weighted average

UN	United Nations
WHO	World health organisation

The above information is intended to give general health and safety guidance on the storage and transport of the product.
It is not intended to apply to the use of the product for which purposes the product label and any appropriate technical usage literature available should be consulted and any relevant licenses, consents or approvals complied with.
The requirements or recommendations of any relevant site or working procedure, system or policy in force or arising from any risk assessment involving the substance or product should take precedence over any of the guidance contained in this safety data sheet where there is a difference in the information given.
The information provided in this safety data sheet is accurate at the date of publication and will be updated as and when appropriate.
No liability will be accepted for any injury, loss or damage resulting from any failure to take account of information or advice contained in this safety data sheet.

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