

SAFETY DATA SHEET

Based upon Regulation (EC) No. 1907/2006, as amended by Regulation (EC) No. 453/2010

KATANA

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:

Product name : FLAZASULFURON 25% WG
Synonyms : EPSILON; KATANA; CHIKARA; SL-160 25% WG; FLAZASULFURON 25% water dispersible granule
Registration number REACH : Not applicable (mixture)
Product type REACH : Mixture

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

1.2.1 Relevant identified uses

Herbicide

1.2.2 Uses advised against

No uses advised against known

1.3 Details of the supplier of the safety data sheet:

Supplier of the safety data sheet

ISK Biosciences Europe N.V.
Pegasus Park, De Kleetlaan 12B - box 9
B-1831 Diegem, Belgium
Tel: +32 2 627 86 11
Fax: +32 2 627 86 00
isk-msds@isk.be

1.4 Emergency telephone number:

24h/24h (Telephone advice: English, French, German, Dutch):
+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:

2.1.1 Classification according to Regulation EC No 1272/2008

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Aquatic Acute	category 1	H400: Very toxic to aquatic life.
Aquatic Chronic	category 1	H410: Very toxic to aquatic life with long lasting effects.

2.1.2 Classification according to Directive 67/548/EEC-1999/45/EC

Classified as dangerous in accordance with the criteria of Directives 67/548/EEC and 1999/45/EC
N; R50-53 - Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

2.2 Label elements:

Labelling according to Regulation EC No 1272/2008 (CLP)



Signal word : Warning

H-statements
H410 : Very toxic to aquatic life with long lasting effects.

P-statements
P273 : Avoid release to the environment.
P391 : Collect spillage.
P501 : Dispose of contents/container to manufacturer/competent authority.

2.3 Other hazards:

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No other hazards known

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SECTION 3: Composition/information on ingredients

3.1 Substances:

Not applicable

3.2 Mixtures:

Name (REACH Registration No)	CAS No EC No	Conc. (C)	Classification according to DSD/DPD	Classification according to CLP	Note	Remark
flazasulfuron (-)	104040-78-0	26.6 %	N; R50-53	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	(1)	Constituent
methylnaphthalenesulfonic acid/formaldehyde, copolymer, sodium salt (-)	81065-51-2	4.9%<=C <5.6%	Xi; R41	Eye Dam. 1; H318	(1)	Constituent
sodium diisopropyl-naphthalenesulphonate (-)	1322-93-6 215-343-3	C < 5 %	Xn; R20/22 Xi; R36/37	Acute Tox. 4; H332 Acute Tox. 4; H302 Eye Irrit. 2; H319 STOT SE 3; H335	(1)	Constituent

(1) For R-phrases and H-statements in full: see heading 16

SECTION 4: First aid measures

4.1 Description of first aid measures:

General:

If you feel unwell, seek medical advice.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.

After eye contact:

Rinse with water. Take victim to an ophthalmologist if irritation persists.

After ingestion:

Rinse mouth with water. Do not induce vomiting. Consult a doctor/medical service if you feel unwell.

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

4.2.1 Acute symptoms

After inhalation:

Unlikely to cause harmful effects.

After skin contact:

Not irritating.

After eye contact:

Not irritating.

After ingestion:

Unlikely to cause harmful effects.

4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1 Extinguishing media:

5.1.1 Suitable extinguishing media:

Polyvalent foam. ABC powder. Carbon dioxide. Water spray.

5.1.2 Unsuitable extinguishing media:

Solid water jet ineffective as extinguishing medium.

5.2 Special hazards arising from the substance or mixture:

On heating/burning: release of toxic and corrosive gases/vapours e.g.: nitrous vapours, hydrofluoric acid, sulphur oxides, carbon monoxide - carbon dioxide.

5.3 Advice for firefighters:

5.3.1 Instructions:

Dilute toxic gases with water spray. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.

5.3.2 Special protective equipment for fire-fighters:

Gloves. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Heat/fire exposure: compressed air/oxygen apparatus.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gloves. Protective clothing. Dust cloud production: compressed air/oxygen apparatus.

Suitable protective clothing

See heading 8.2

6.2 Environmental precautions:

Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray. Prevent soil and water pollution. Prevent spreading in sewers.

6.3 Methods and material for containment and cleaning up:

Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4 Reference to other sections:

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1 Precautions for safe handling:

Avoid raising dust. Keep away from naked flames/heat. Observe normal hygiene standards. Keep container tightly closed. Do not discharge the waste into the drain.

7.2 Conditions for safe storage, including any incompatibilities:

7.2.1 Safe storage requirements:

Keep only in the original container. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources.

7.2.3 Suitable packaging material:

No data available

7.2.4 Non suitable packaging material:

No data available

7.3 Specific end use(s):

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.
The product will only be used as herbicide.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters:

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

Product name	Test	Number
No data available		

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

If applicable and available it will be listed below.

8.1.5 Control banding

If applicable and available it will be listed below.

8.2 Exposure controls:

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Avoid raising dust. Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

8.2.2 Individual protection measures, such as personal protective equipment

Observe normal hygiene standards. Keep container tightly closed. Do not eat, drink or smoke during work.

a) Respiratory protection:

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Dust production: dust mask with filter type P1.

b) Hand protection:

Gloves.

- materials for protective clothing (good resistance)

Rubber, PVC, plastics.

c) Eye protection:

Safety glasses. In case of dust production: protective goggles.

d) Skin protection:

Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical form	Grains
Odour	Cinnamon odour
Odour threshold	No data available
Colour	Brown
Particle size	No data available
Explosion limits	No data available
Flammability	No data available on direct fire hazard
Log Kow	Not applicable (mixture)
Dynamic viscosity	No data available
Kinematic viscosity	No data available
Melting point	No data available
Boiling point	No data available
Flash point	No data available
Evaporation rate	ether ; No data available
Vapour pressure	No data available
Relative vapour density	No data available
Solubility	No data available
Relative density	0.84
Decomposition temperature	No data available
Auto-ignition temperature	No data available
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	5.1 ; 1 %

Physical hazards

No physical hazard class

9.2 Other information:

Absolute density	840 kg/m ³
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SECTION 10: Stability and reactivity

10.1 Reactivity:

Substance has acid reaction.

10.2 Chemical stability:

Stable under normal conditions.

10.3 Possibility of hazardous reactions:

No data available.

10.4 Conditions to avoid:

Avoid raising dust. Keep away from naked flames/heat.

10.5 Incompatible materials:

No data available.

10.6 Hazardous decomposition products:

On heating/burning: release of toxic and corrosive gases/vapours e.g.: nitrous vapours, hydrofluoric acid, sulphur oxides, carbon monoxide - carbon dioxide.

SECTION 11: Toxicological information

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11.1 Information on toxicological effects:

11.1.1 Test results

Acute toxicity

FLAZASULFURON 25% WG

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination
Oral	LD50		4800 mg/kg		Rat		Experimental value
Dermal	LD50		> 2000 mg/kg		Rat		Experimental value
Inhalation	LC50		> 6.17 mg/l	4 h	Rat		Experimental value

flazasulfuron

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination
Oral	LD50		> 5000 mg/kg		Rat		Experimental value
Dermal	LD50		> 2000 mg/kg		Rat		Experimental value
Inhalation	LC50		> 5.99 mg/l	4 h	Rat		Experimental value

Classification of the mixture is based on test data on the mixture as a whole

Conclusion

Low acute toxicity by the oral route

Low acute toxicity by the dermal route

Low acute toxicity by the inhalation route

Corrosion/irritation

FLAZASULFURON 25% WG

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination
Eye	Not irritating					Literature study
Skin	Not irritating					Literature study

Classification of the mixture is based on test data on the mixture as a whole

Conclusion

Not classified as irritating to the skin

Not classified as irritating to the eyes

Respiratory or skin sensitisation

FLAZASULFURON 25% WG

No (test)data on the mixture available

Specific target organ toxicity

FLAZASULFURON 25% WG

No (test)data on the mixture available

Mutagenicity (in vitro)

FLAZASULFURON 25% WG

No (test)data on the mixture available

Mutagenicity (in vivo)

FLAZASULFURON 25% WG

No (test)data on the mixture available

Carcinogenicity

FLAZASULFURON 25% WG

No (test)data on the mixture available

Reproductive toxicity

FLAZASULFURON 25% WG

No (test)data on the mixture available

Conclusion CMR

Not classified for reprotoxic or developmental toxicity

Not classified for mutagenic or genotoxic toxicity

Not classified for carcinogenicity

Toxicity other effects

FLAZASULFURON 25% WG

No (test)data on the mixture available

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Chronic effects from short and long-term exposure

FLAZASULFURON 25% WG

No effects known.

11.1.2 Other information

FLAZASULFURON 25% WG

No (test) data on the mixture available

SECTION 12: Ecological information

12.1 Toxicity:

FLAZASULFURON 25% WG

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		> 100 mg/l	96 h	Oncorhynchus mykiss			Experimental value
	LC50		> 400 mg/l	96 h	Lepomis macrochirus			Experimental value
Acute toxicity invertebrates	EC50		> 100 mg/l	48 h	Daphnia magna			Experimental value
Toxicity algae and other aquatic plants	EC50		0.025 mg/l	72 h	Selenastrum capricornutum			Experimental value

flazasulfuron

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		22 mg/l	96 h	Oncorhynchus mykiss	Flow-through system		Experimental value
	LC50		>98 mg/l	96 h	Lepomis macrochirus	Flow-through system		Experimental value
Acute toxicity invertebrates	EC50		>106 mg/l	48 h	Daphnia magna			Experimental value
Toxicity algae and other aquatic plants	EC50		0.045 mg/l	72 h	Selenastrum capricornutum			Experimental value

Classification of the mixture is based on test data on the mixture as a whole

Conclusion

Slightly harmful to fishes
Slightly harmful to invertebrates (Daphnia)
Highly toxic to algae
May cause long-term adverse effects in the aquatic environment

12.2 Persistence and degradability:

flazasulfuron

Half-life soil (t1/2 soil)

Method	Value	Primary degradation/mineralisation	Value determination
	12.8 - 15.9 day(s)		

Conclusion

Contains non readily biodegradable component(s)

12.3 Bioaccumulative potential:

FLAZASULFURON 25% WG

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

flazasulfuron

Log Kow

Method	Remark	Value	Temperature	Value determination
		< 1.5		

methylnaphthalenesulfonic acid/formaldehyde, copolymer, sodium salt

Log Kow

Method	Remark	Value	Temperature	Value determination
	No data available			

Conclusion

No straightforward conclusion can be drawn based upon the available numerical values

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12.4 Mobility in soil:

FLAZASULFURON 25% WG

(log) Koc

Parameter	Method	Value	Value determination
flazasulfuron			No data available

flazasulfuron

(log) Koc

Parameter	Method	Value	Value determination
Koc		46.16	Experimental value

Conclusion

No straightforward conclusion can be drawn based upon the available numerical values

12.5 Results of PBT and vPvB assessment:

Does not contain component(s) that meet(s) the criteria of PBT and/or vPvB as listed in Annex XIII of Regulation (EC) No. 1907/2006.

12.6 Other adverse effects:

FLAZASULFURON 25% WG

Global warming potential (GWP)

None of the known components is included in the list of substances which may contribute to the greenhouse effect (Regulation (EC) No 842/2006)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No. 1272/2008 and 1005/2009)

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1 Waste treatment methods:

13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, decision 2000/0532/EC).

02 01 08* (agrochemical waste containing dangerous substances). Hazardous waste according to Directive 2008/98/EC.

13.1.2 Disposal methods

Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Do not discharge into surface water.

13.1.3 Packaging/Container

Waste material code packaging (Directive 2008/98/EC).

15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1 UN number:

UN number	3077
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14.2 UN proper shipping name:

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name ADR	flazasulfuron

14.3 Transport hazard class(es):

Hazard identification number	90
Class	9
Classification code	M7

14.4 Packing group:

Packing group	III
Labels	9

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes
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14.6 Special precautions for user:

Special provisions	274
Special provisions	335
Special provisions	601
Limited quantities	Combination packagings: not more than 5 kg per inner packaging for solids. A package shall not weigh more than 30 kg. (gross mass)

Rail (RID)

14.1 UN number:

UN number	3077
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14.2 UN proper shipping name:

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name RID	flzasulfuron

14.3 Transport hazard class(es):

Hazard identification number	90
Class	9
Classification code	M7

14.4 Packing group:

Packing group	III
Labels	9

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes
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14.6 Special precautions for user:

Special provisions	274
Special provisions	335
Special provisions	601
Limited quantities	Combination packagings: not more than 5 kg per inner packaging for solids. A package shall not weigh more than 30 kg. (gross mass)

Inland waterways (ADN)

14.1 UN number:

UN number	3077
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14.2 UN proper shipping name:

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name ADN	flzasulfuron

14.3 Transport hazard class(es):

Class	9
Classification code	M7

14.4 Packing group:

Packing group	III
Labels	9

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes
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14.6 Special precautions for user:

Special provisions	274
Special provisions	335
Special provisions	601
Limited quantities	Combination packagings: not more than 5 kg per inner packaging for solids. A package shall not weigh more than 30 kg. (gross mass)

Sea (IMDG)

14.1 UN number:

UN number	3077
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14.2 UN proper shipping name:

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name IMO	flzasulfuron

14.3 Transport hazard class(es):

Class	9
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14.4 Packing group:

Packing group	III
Labels	9

14.5 Environmental hazards:

Marine pollutant	P
Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	274
Special provisions	335
Special provisions	
Special provisions	
Limited quantities	Combination packagings: not more than 5 kg per inner packaging for solids. A package shall not weigh more than 30 kg. (gross mass)

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Annex II of MARPOL 73/78	Not applicable, based on available data
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Air (ICAO-TI/IATA-DGR)

14.1 UN number:

UN number	3077
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14.2 UN proper shipping name:

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
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Techn./chem. name ICAO	flazasulfuron
14.3 Transport hazard class(es):	
Class	9
14.4 Packing group:	
Packing group	III
Labels	9
14.5 Environmental hazards:	
Environmentally hazardous substance mark	yes
14.6 Special precautions for user:	
Special provisions	A97
Special provisions	A158
Special provisions	A179
Passenger and cargo transport: limited quantities: maximum net quantity per packaging	30 kg G

SECTION 15: Regulatory information

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

European legislation:

Volatile organic compounds (VOC)

0 %

National legislation

- The Netherlands

Waterbezwaarlijkheid	4
Waste identification (the Netherlands)	LWCA (the Netherlands): KGA category 03

- Germany

WGK	2	Classification water polluting based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 4)
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15.2 Chemical safety assessment:

No chemical safety assessment has been conducted.

SECTION 16: Other information

Labelling according to Directive 67/548/EEC-1999/45/EC (DSD/DPD)

Labels



Dangerous for the environment

R-phrases

50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S-phrases

35 This material and its container must be disposed of in a safe way
57 Use appropriate container to avoid environmental contamination

Full text of any R-phrases referred to under headings 2 and 3:

R20/22 Harmful by inhalation and if swallowed
R36/37 Irritating to eyes and respiratory system
R41 Risk of serious damage to eyes
R50 Very toxic to aquatic organisms
R53 May cause long-term adverse effects in the aquatic environment

Full text of any H-statements referred to under headings 2 and 3:

H302 Harmful if swallowed.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

(*) = INTERNAL CLASSIFICATION BY BIG

PBT-substances = persistent, bioaccumulative and toxic substances

DSD Dangerous Substance Directive

DPD Dangerous Preparation Directive

CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and

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according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.