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Product name	4535, GLYPHOSATE 450 g/l SL	June 2014
Safety data sheet according to EU Reg. 1907/2006 as amended		Supersedes December 2013

SAFETY DATA SHEET

4535, GLYPHOSATE 450 g/l SL

Revision: Sections containing a revision or new information are marked with a ♣.

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

- 1.1. **Product identifier** **4535, GLYPHOSATE 450 g/l SL**
- 1.2. **Relevant identified uses of the substance or mixture and uses advised against** Can be used as herbicide only.
- 1.3. **Details of the supplier of the safety data sheet** **CHEMINOVA A/S**
P.O. Box 9
DK-7620 Lemvig
Denmark
sds@cheminova.dk
- 1.4. **Emergency telephone number** ... (+45) 97 83 53 53 (24 h; for emergencies only)

♣ SECTION 2: HAZARDS IDENTIFICATION

- 2.1. **Classification of the substance or mixture** See section 16 for full text of hazard statements and R-phrases.
- CLP classification of the product according to Reg. 1272/2008 as amended Hazards to the aquatic environment, acute: Category 1 (H400)
chronic: Category 2 (H411)
- DPD classification of the product according to Dir. 1999/45/EC as amended N;R50/53
- WHO classification Class U (Unlikely to present acute hazard in normal use)
Guidelines to Classification 2009
- Health hazards The product can cause mild eye irritation. It may be slightly irritating to skin, airways and the upper digestive tract, especially on prolonged contact.
- Environmental hazards The product is a herbicide and is therefore expected to be harmful to all green plants.
- 2.2. **Label elements**
According to EU Reg. 1272/2008 as amended
Product identifier 4535, Glyphosate 450 g/l SL

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Hazard pictogram (GHS09)



Signal word

Warning

Hazard statements

H400

Very toxic to aquatic life.

H411

Toxic to aquatic life with long lasting effects.

Supplementary hazard statement

EUH401

To avoid risks to human health and the environment, comply with the instructions of use.

Precautionary statements

P273

Avoid release to the environment.

P391

Collect spillage.

P501

Dispose of contents/container as hazardous waste.

According to Dir. 1999/45/EC as amended

Hazard symbol

N



Dangerous
for the
environment

R-phrase

R50/53

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

S-phrases

S60

This material and its container must be disposed of as hazardous waste.

S61

Avoid release to the environment. Refer to special instructions/safety data sheets.

Other mention

To avoid risks to man and the environment, comply with the instructions of use.

2.3. **Other hazards**

None of the ingredients in the product meets the criteria for being PBT or vPvB.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. **Substances**

The product is a mixture, not a substance.

3.2. **Mixtures**

See section 16 for full text of hazard statements and R-phrases.

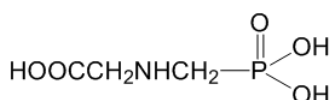
Active ingredient

Glyphosate, in the form of its isopropylamine salt

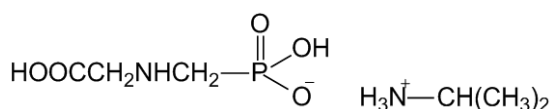
The product contains 607 g/l of the pure active ingredient glyphosate as its isopropylamine salt, equivalent to 450 g/l of the free acid glyphosate.

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Glyphosate	Content: 38% by weight
CAS name	Glycine, N-(phosphonomethyl)-
CAS no.	1071-83-6
IUPAC name(s)	N-(Phosphonomethyl)glycine
ISO name/EU name	Glyphosate
EC no. (EINECS no.)	213-997-4
EU index no.	607-315-00-8
CLP classification of the ingredient	Eye damage: Category 1 (H318)
	Hazards to the aquatic environment, chronic: Category 2 (H411)
DSD classification of the ingredient	Xi;R41 N;R51/53
Structural formula	



Glyphosate isopropylamine salt	Content: 51% by weight
CAS name	Glycine, N-(phosphonomethyl)-, compd. with 2-propanamine (1:1)
CAS no.	38641-94-0
IUPAC name	—
EU name	N-(phosphonomethyl)glycine, compound with 2-propylamine (1:1)
Common name	Glyphosate isopropylamine salt
Other name(s)	Glyphosate-isopropylammonium
EC no. (EINECS no.)	254-056-8
EU index no.	015-184-00-8
CLP classification of the ingredient	Hazards to the aquatic environment, chronic: Category 2 (H411)
DSD classification of the ingredient	N;R51/53
Structural formula	



Reportable ingredients

	Content (% w/w)	CAS no.	EC no. (EINECS no.)	CLP classification	DSD classification
Tallow alkylamine ethoxylate	5 - 10	61791-26-2	None	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Aquatic Acute 1 (H400)	Xn;R22 Xi;R36/38 N;R50 Harmful, dangerous for the environment
Quaternary ammonium compounds, coco alkylbis(hydroxyethyl)methyl chlorides	1 - 5	70750-47-9	254-056-8	Acute Tox. 4 (H302) Skin Corr. 1B (H314) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	Xn;R22 C;R34 N;R50 Corrosive, dangerous for the environment

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation	If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance.
Skin contact	Remove contaminated clothing and footwear. Flush skin with

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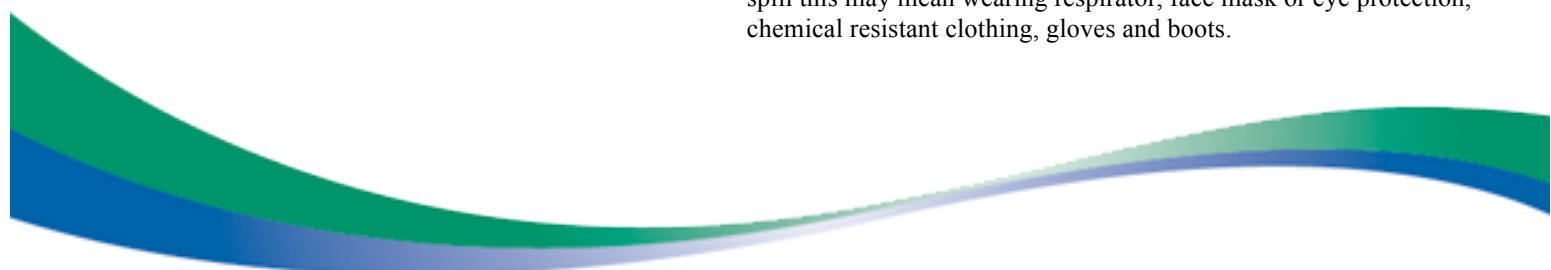
	water. Wash with water and soap. See physician if irritation develops.
Eye contact	Immediately rinse eyes with much water or eyewash solution, occasionally opening eyelids, until no evidence of chemical remains. Remove contact lenses after a few minutes and rinse again. Get medical attention immediately.
Ingestion	The product may cause gastrointestinal tract irritation. Immediately rinse mouth and drink milk or water. Do not induce vomiting. If vomiting does occur, rinse mouth and drink fluids again. Call a doctor or get medical attention.
4.2. Most important symptoms and effects, both acute and delayed	Primarily irritation.
4.3. Indication of any immediate medical attention and special treatment needed	Immediate medical attention is required in case of ingestion or eye contact.
Note to physician	The irritating effects of this product can be treated as usual against effects of acids or acid fumes. Possible mucosal damage may contraindicate the use of gastric lavage.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media	Dry chemical or carbon dioxide for small fires, water spray or foam for large fires. Avoid heavy hose streams.
5.2. Special hazards arising from the substance or mixture	The essential breakdown products are carbon monoxide, carbon dioxide, phosphorus pentoxide and nitrogen oxides.
5.3. Advice for firefighters	Use water spray to keep fire-exposed containers cool. Approach fire from upwind to avoid hazardous vapours and toxic decomposition products. Fight fire from protected location or maximum possible distance. Dike area to prevent water runoff. Firemen should wear self-contained breathing apparatus and protective clothing. It is advisable for firemen to avoid direct contact with the product such as splashing.

♣ SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures	<p>It is recommended to have a predetermined plan for the handling of spills. Empty, closable vessels (not metal) for the collection of spills should be available.</p> <p>In case of large spill (involving 10 tons of the product or more):</p> <ol style="list-style-type: none"> 1. Use personal protection equipment; see section 8 2. Call emergency telephone no.; see section 1 3. Alert authorities. <p>Observe all safety precautions when cleaning up spills. Use personal protection equipment. Depending on the magnitude of the spill this may mean wearing respirator, face mask or eye protection, chemical resistant clothing, gloves and boots.</p>
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Stop the source of the spill immediately if safe to do so. Personal exposure by splashing must be avoided.

6.2. **Environmental precautions** Contain the spill to prevent any further contamination of surface, soil or water. Wash waters must be prevented from entering surface water drains. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.

6.3. **Methods and materials for containment and cleaning up** It is recommended to consider possibilities to prevent damaging effects of spills, such as bunding or capping. See GHS (Annex 4, Section 6).

If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should be absorbed onto an absorptive material such as universal binder, hydrated lime, attapulgate, bentonite or other absorbent clays. Collect the contaminated absorbent in suitable containers. Clean area with detergent and rinse with water. Absorb wash liquid with absorbent and transfer to suitable containers. The used containers should be properly closed and labelled.

Spills which soak into the ground should be dug up and transferred to suitable containers.

Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal.

6.4. **Reference to other sections** See subsection 8.2. for personal protection. See section 13 for disposal.

♣ SECTION 7: HANDLING AND STORAGE
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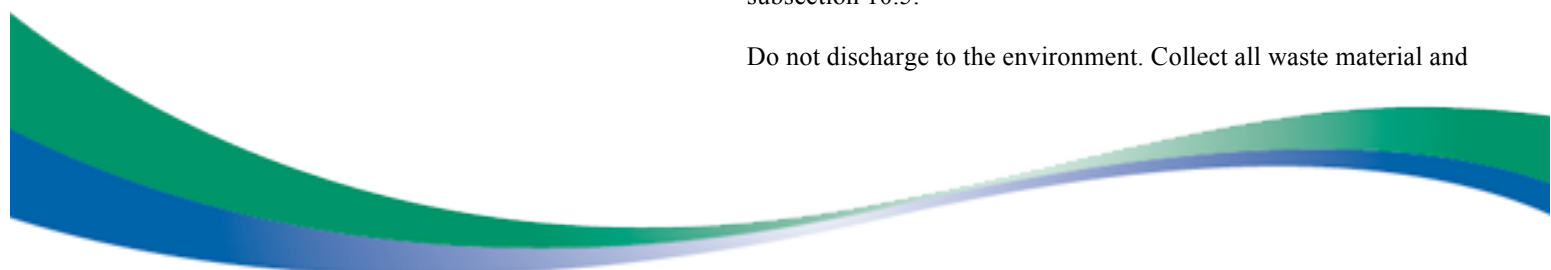
7.1. **Precautions for safe handling** In an industrial environment it is recommended to avoid all personal contact with the product, if possible by using closed systems with remote system control. Otherwise it is recommended to handle the material by mechanical means as much as possible. Adequate ventilation or local exhaust ventilation is required. The exhaust gases should be filtered or treated otherwise. For personal protection in this situation, see section 8.

For its use as a pesticide, first look for precautions and personal protection measures on the officially approved label on the packaging or for other official guidance or policy in force. If these are lacking, see section 8.

Avoid contact with eyes, skin or clothing. Avoid breathing vapour or spray mist. Wash thoroughly after handling. Remove contaminated clothing immediately. Then wash thoroughly and put on clean clothing.

The product or its spray solutions should be stored in stainless steel, aluminium, fiberglass, plastic or plastic-lined containers only. See subsection 10.5.

Do not discharge to the environment. Collect all waste material and



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remains from cleaning equipment, etc., and dispose of as hazardous waste. See section 13 for disposal.

7.2. Conditions for safe storage, including any incompatibilities

The product is stable at normal storage temperatures.

Keep in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

7.3. Specific end use(s)

This product is a registered pesticide, which may only be used for the applications it is registered for, in accordance with a label approved by the regulatory authorities.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

To our knowledge, personal exposure limits have not been established for glyphosate or any other component in this product. However, exposure limits defined by local regulations may exist and must be observed.

Glyphosate free acid

DNEL, systemic 0.32 mg/kg bw/day

PNEC, aquatic 0.028 mg/l

8.2. Exposure controls

When used in a closed system, personal protection equipment will not be required. The following is meant for other situations, when the use of a closed system is not possible, or when it is necessary to open the system. Consider the need to render equipment or piping systems non-hazardous before opening.

The precautions mentioned below are primarily meant for handling of the undiluted product and for preparing the spray solution, but can be recommended for spraying as well.



Respiratory protection

The product is not likely to present an airborne exposure concern during normal handling, but in the event of a discharge of the material which produces a heavy vapour or mist, workers should put on officially approved face mask or respiratory protection equipment with a universal filter type including particle filter.



Protective gloves

Wear heavy duty, natural rubber gloves. The breakthrough times of these gloves for glyphosate are unknown, but it is expected that they will give adequate protection. It is recommended to limit the work to be done manually.



Eye protection

Wear face shield rather than goggles or safety glasses. It is recommended to have an eye wash fountain immediately available in the work area when there is a potential for eye contact.



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Other skin protection

Wear appropriate chemical resistant clothing to prevent skin contact depending on the extent of exposure. During most normal work situations where exposure to the material cannot be avoided for a limited time span, waterproof pants and apron of chemical resistant material or coveralls of polyethylene (PE) will be sufficient. Coveralls of PE must be discarded after use if contaminated. In cases of appreciable or prolonged exposure, coveralls of barrier laminate may be required.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on physical and chemical properties

Appearance	Yellow liquid
Odour	Faint amine-like odour
Odour threshold	Not determined
pH	1% solution in water: 5.04 at 25°C
Melting point/freezing point	Below 0°C
Initial boiling point and boiling range	111°C
Flash point	Above 111°C if any
Evaporation rate	Not determined
Flammability (solid/gas)	Not applicable (liquid)
Upper/lower flammability or explosive limits	Not determined
Vapour pressure	For glyphosate free acid: 1.31×10^{-5} Pa at 25°C
Vapour density	Not determined
Relative density	Not determined
Solubility(ies)	Density: 1.195 g/ml at 20°C Solubility of glyphosate isopropylamine salt at 20°C in dichloromethane 0.184 g/l methanol 15.88 g/l Solubility of glyphosate free acid at 20°C in water: 10.5 g/l Glyphosate free acid: $\log K_{ow} = -3.3$
Partition coefficient n-octanol/water	Not determined
Autoignition temperature	Not determined
Decomposition temperature	Not determined
Viscosity	140 mm ² /s at 20°C, 47.5 mm ² /s at 40°C (kinematic viscosity)
Explosive properties.....	Not explosive
Oxidising properties	Not oxidising

9.2. Other information

Miscibility	The product is miscible with water.
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♣ SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity	See below.
10.2. Chemical stability	Stable at ambient temperatures.
10.3. Possibility of hazardous reactions	The product can react with caustic (basic) materials in an acid-base chemical neutralisation reaction which may be hazardous because of heat release.
10.4. Conditions to avoid	Heating of the product will produce harmful and irritant vapours.
10.5. Materials to avoid	Do not mix or store this product or spray solutions of this product in galvanised or unlined steel containers or spray tanks.

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The product may react with such containers to produce hydrogen gas which could flash or explode if ignited. Stainless steel may be used.

10.6. **Hazardous decomposition products** See subsection 5.2.

♣ SECTION 11: TOXICOLOGICAL INFORMATION

11.1. **Information on toxicological effects** * = Based on available data, the classification criteria are not met.

Product

Acute toxicity The product is practically non-toxic. * However, it should always be treated with the usual care of handling chemicals.

No significant adverse health effects are expected to develop if only small amounts (less than a mouthful) are swallowed. Ingestion of similar formulations has been reported to produce gastrointestinal discomfort with nausea, vomiting and diarrhoea. Ingestion of large quantities of a similar product has been reported to result in hypotension and lung oedema.

The acute toxicity of the product is measured as:

Route(s) of entry	- ingestion	LD ₅₀ , oral, rat: > 2000 mg/kg (method OECD 425)
	- skin	LD ₅₀ , dermal, rat: > 2000 mg/kg (method OECD 402)
	- inhalation	LC ₅₀ , inhalation, rat: 5.85 mg/l/4 h (method FIFRA 403)

Skin corrosion/irritation Slightly irritating to skin (method OECD 404). *

Serious eye damage/irritation Mildly irritating to eyes (method OECD 405). *

Respiratory or skin sensitisation ... The product is not sensitising (method OECD 406). *

Aspiration hazard The product does not present an aspiration hazard. *

Symptoms and effects, acute and delayed Primarily irritation.

Glyphosate isopropylamine salt

Acute toxicity The substance is practically non-toxic. *

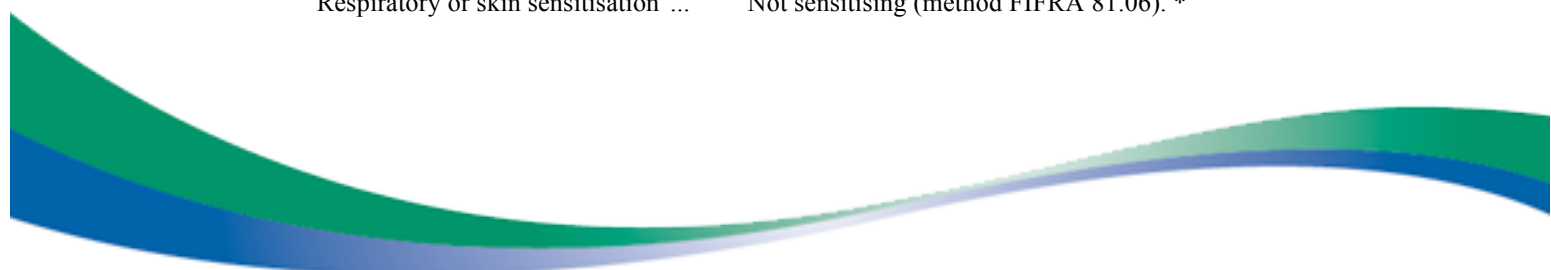
The acute toxicity of the substance is measured as:

Route(s) of entry	- ingestion	LD ₅₀ , oral, rat: > 2000 mg/kg (method FIFRA 81.01)
	- skin	LD ₅₀ , dermal, rat: > 4000 mg/kg (method FIFRA 81.02)
	- inhalation	LC ₅₀ , inhalation, rat: > 4.72 mg/l/4 h (method FIFRA 81.03) (no signs of toxicity at this concentration)

Skin corrosion/irritation Not irritating to skin (method FIFRA 81.05). *

Serious eye damage/irritation Not irritating to eyes (method FIFRA 81.04). *

Respiratory or skin sensitisation ... Not sensitising (method FIFRA 81.06). *



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Glyphosate

Toxicokinetics, metabolism and distribution

After oral intake, glyphosate is rapidly absorbed but only to a limited extent (approx. 30%). Metabolism is very limited and excretion is rapid and nearly complete. Distribution is generally low with residues occurring in all tissues. There is no evidence of accumulation.

Acute toxicity The substance is practically non-toxic. *

The acute toxicity of the substance is measured as:

Route(s) of entry	- ingestion	LD ₅₀ , oral, rat: > 5000 mg/kg (method OECD 401)
	- skin	LD ₅₀ , dermal, rat: > 2000 mg/kg (method OECD 402)
	- inhalation	LC ₅₀ , inhalation, rat: > 5 mg/l/4 h (method OECD 403) (no signs of toxicity at this concentration)

Skin corrosion/irritation Not irritating to skin (method FIFRA 81.05). *

Serious eye damage/irritation Irritating to eyes (method FIFRA 81.04).

Respiratory or skin sensitisation ... Not sensitising (method OECD 406). No allergic effects on humans have been reported. *

Germ cell mutagenicity Glyphosate was examined for mutagenicity in a wide range of tests covering all relevant endpoints *in vitro* as well as *in vivo*. Against the background of this large amount of data, it can be concluded that glyphosate does not exhibit a mutagenic risk. *

Carcinogenicity No indications of carcinogenic effects are found (8 studies). US-EPA has classified glyphosate in category E (evidence of non-carcinogenicity for humans). *

Reproductive toxicity A number of multi-generation studies did not indicate a specific hazard of glyphosate for reproduction. The effects seen at very high doses were the same as for chronic toxicity. Glyphosate does not cause teratogenicity (does not cause birth defects). Only at very high doses (4800 mg/kg bw/day) adverse effects on offspring were noted, such as reduced weight of foetuses (5 studies). *

STOT – single exposure To our knowledge, no specific effects have been observed after single exposure. *

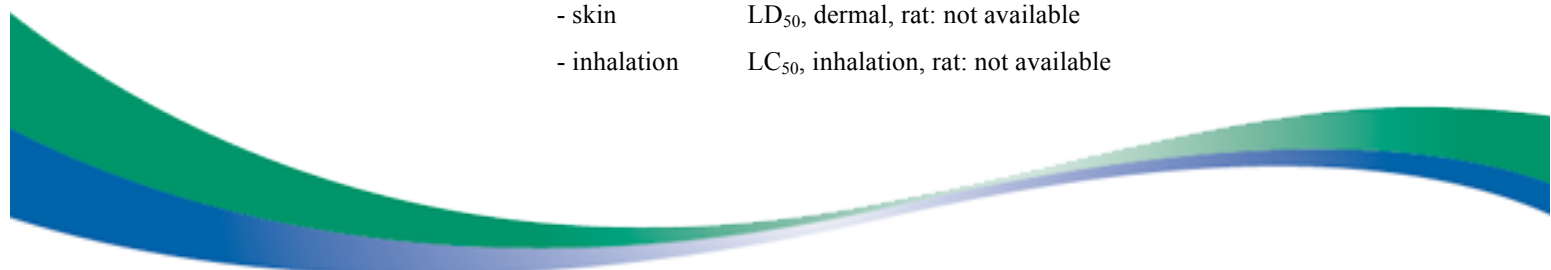
STOT – repeated exposure In long-term studies with glyphosate free acid, the first minor effects (body weight and liver weight changes) were noted in rats at exposure levels of 60 - 100 mg glyphosate/kg bw/day. No signs of toxicity were found at any level, including the highest exposure level of 4800 mg glyphosate/kg bw/day. *

Tallow alkylamine ethoxylate

Acute toxicity

The substance is harmful by ingestion. The acute toxicity of the substance is measured as:

Route(s) of entry	- ingestion	LD ₅₀ , oral, rat: 1569 mg/kg (method OECD 401)
	- skin	LD ₅₀ , dermal, rat: not available
	- inhalation	LC ₅₀ , inhalation, rat: not available



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Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/irritation	Causes serious eye irritation.
STOT – single exposure	May cause irritation of mucous membranes.
STOT – repeated exposure	May cause damage on prolonged or repeated exposure.
<u>Quaternary ammonium compounds, coco alkylbis(hydroxyethyl)methyl chlorides</u>	
Acute toxicity	The substance is harmful by ingestion. The acute toxicity of the substance is:
Route(s) of entry	
- ingestion	LD ₅₀ , oral, rat: 300 - 2000 mg/kg
- skin	LD ₅₀ , dermal, rat: not available
- inhalation	LC ₅₀ , inhalation, rat: not available
Skin corrosion/irritation	Corrosive to skin.
Serious eye damage/irritation	Severely irritating to eyes with the potential to cause permanent eye damage.

SECTION 12: ECOLOGICAL INFORMATION

- 12.1. **Toxicity** The product is a herbicide and therefore expected to be harmful to all green plants. The product is harmful to fish and aquatic invertebrates. It is considered as less harmful to birds, insects and soil micro- and macroorganisms.

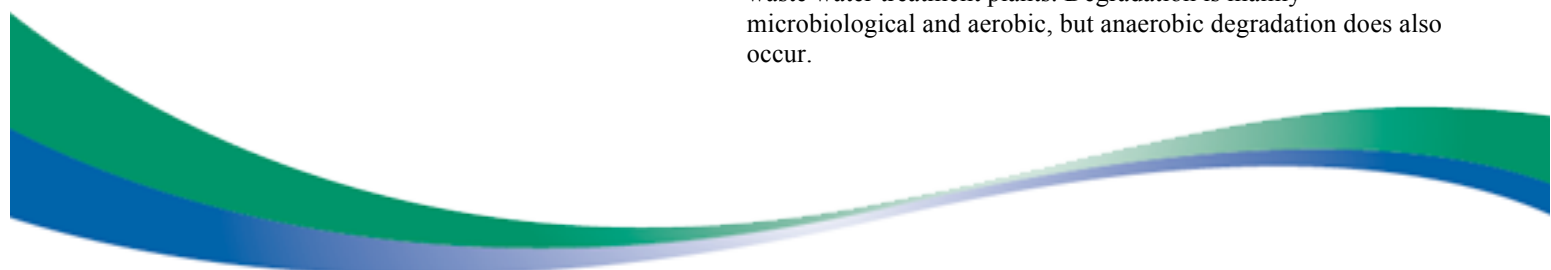
The ecotoxicity of the product is measured as:

- Fish	Rainbow trout (<i>Oncorhynchus mykiss</i>)	96-h LC ₅₀ : 14.5 mg/l
- Invertebrates	Daphnids (<i>Daphnia magna</i>)	48-h EC ₅₀ : 14.5 mg/l
- Algae	Green algae (<i>Desmodesmus subspicatus</i>)	72-h IC ₅₀ : 5.16 mg/l
- Birds	Bobwhite quail (<i>Colinus virginianus</i>)	LD ₅₀ : > 2000 mg/kg
- Earthworms	<i>Eisenia foetida foetida</i>	14-day LC ₅₀ : > 1000 mg/kg dry soil

The following is measured on a similar product:

- Fish	Rainbow trout (<i>Oncorhynchus mykiss</i>)	21-day NOEC: 0.43 - 0.81 mg/l
- Invertebrates	Daphnids (<i>Daphnia magna</i>)	21-day NOEC: 1.5 mg/l
- Algae	Diatoms (<i>Skeletonema costatum</i>)	96-h EC ₅₀ : 0.340 mg/l
	(<i>Navicula pelliculosa</i>)	96-h EC ₅₀ : 0.392 mg/l
- Plants	Duckweed (<i>Lemna gibba</i>)	7-day EC ₅₀ : 27 mg/l
		7-day NOEC: 7.9 mg/l

- 12.2. **Persistence and degradability** **Glyphosate** is not readily biodegradable. It undergoes slow degradation in the environment and in waste water treatment plants. No adverse effects are found at concentrations up to 100 mg/l in waste water treatment plants. Degradation is mainly microbiological and aerobic, but anaerobic degradation does also occur.



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Primary degradation half-lives in the environment vary much with circumstances, but are usually around 3 - 30 days in aerobic soil and water.

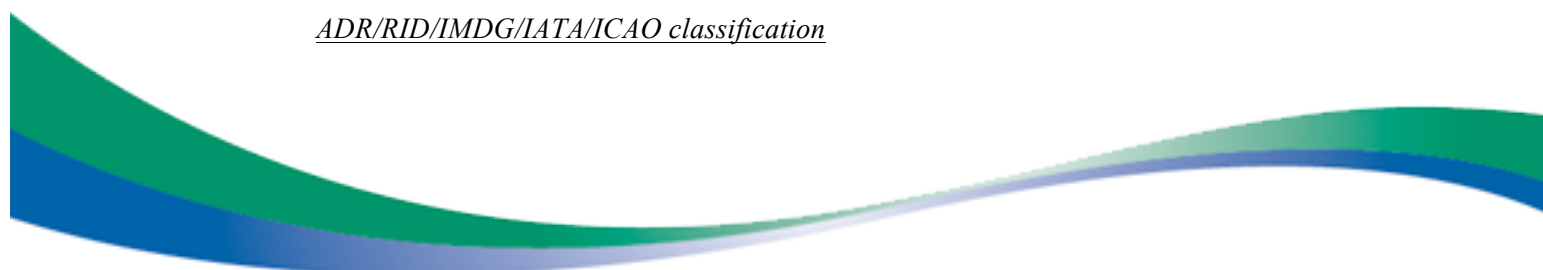
- 12.3. **Bioaccumulative potential** See section 9 for octanol-water partition coefficient.
- Glyphosate** is not expected to bioaccumulate. In several studies on bioaccumulation of glyphosate, both in marine and freshwater systems, only low bioaccumulation factors were found.
- 12.4. **Mobility in soil** In the environment **glyphosate** is not mobile, but is rapidly deactivated by adsorption to clay particles. Glyphosate binds strongly to soil.
- 12.5. **Results of PBT and vPvB assessment** None of the ingredients meets the criteria for being PBT or vPvB.
- 12.6. **Other adverse effects** Other relevant hazardous effects in the environment are not known.

SECTION 13: DISPOSAL CONSIDERATIONS

- 13.1. **Waste treatment methods** Remaining quantities of the material and empty but unclean packaging should be regarded as hazardous waste.
- Disposal of waste and packagings must always be in accordance with all applicable local regulations.
- Disposal of product According to the Waste Framework Directive (2008/98/EC), possibilities for reuse or reprocessing should first be considered. If this is not feasible, the material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing.
- Disposal of packaging It is recommended to consider possible ways of disposal in the following order:
1. Reuse or recycling should first be considered. If offered for recycling, containers must be emptied and triply rinsed (or equivalent). Do not discharge rinsing water to sewer systems.
 2. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.
 3. Delivery of the packaging to a licensed service for disposal of hazardous waste.
 4. Disposal in a landfill or burning in open air should only occur if no other possibility exists. For disposal in a landfill containers should be emptied completely, rinsed and punctured to make them unusable for other purposes. If burned, stay out of smoke.

SECTION 14: TRANSPORT INFORMATION

ADR/RID/IMDG/IATA/ICAO classification



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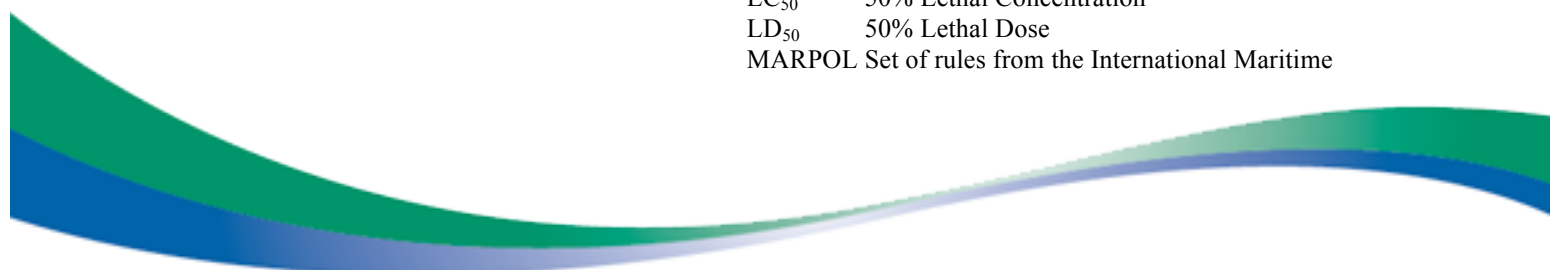
- 14.1. **UN number** 3082
- 14.2. **UN proper shipping name** Environmentally hazardous substance, liquid, n.o.s. (glyphosate isopropylamine salt)
- 14.3. **Transport hazard class(es)** 9
- 14.4. **Packing group** III
- 14.5. **Environmental hazards** Marine pollutant
- 14.6. **Special precautions for user** Do not discharge to the environment.
- 14.7. **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code** The product is not transported in bulk tankers.

SECTION 15: REGULATORY INFORMATION

- 15.1. **Safety, health and environmental regulations/legislation specific for the substance or mixture** Seveso category in Annex I, part 2, to Dir. 96/82/EC: dangerous for the environment.
All ingredients are covered by EU chemical legislation.
- 15.2. **Chemical safety assessment** A chemical safety assessment is not required to be included for this product.

♣ SECTION 16: OTHER INFORMATION

- Relevant changes in the safety data sheet Minor corrections only.
- List of abbreviations
- CAS Chemical Abstracts Service
 - CLP Classification, Labelling and Packaging; refers to EU regulation 1272/2008 as amended
 - Dir. Directive
 - DNEL Derived No Effect Level
 - DPD Dangerous Preparation Directive; refers to Dir. 1999/45/EC as amended
 - DSD Dangerous Substance Directive; refers to Dir. 67/548/EEC as amended
 - EC European Community
 - EC₅₀ 50% Effect Concentration
 - EINECS European Inventory of Existing Commercial Chemical Substances
 - FIFRA Federal Insecticide, Fungicide and Rodenticide Act
 - GHS Globally Harmonized classification and labelling System of chemicals, Fifth revised edition 2013
 - IBC International Bulk Chemical code
 - IC₅₀ 50% Inhibition Concentration
 - ISO International Organisation for Standardization
 - IUPAC International Union of Pure and Applied Chemistry
 - LC₅₀ 50% Lethal Concentration
 - LD₅₀ 50% Lethal Dose
 - MARPOL Set of rules from the International Maritime



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Product name	4535, GLYPHOSATE 450 g/l SL	June 2014

	Organisation (IMO) for prevention of sea pollution
NOEC	No Observed Effect Concentration
N.o.s.	Not otherwise specified
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, Bioaccumulative, Toxic
PNEC	Predicted No Effect Concentration
Reg.	Regulation
R-phrase	Risk phrase
SL	Soluble concentrate
S-phrase	Safety phrase
STOT	Specific Target Organ Toxicity
US-EPA	Environmental Protection Agency USA
vPvB	very Persistent, very Bioaccumulative
WHO	World Health Organisation

References Data measured on this and a similar product are unpublished company data. Data on ingredients are from published literature data and can be found several places.

Method for classification Test data

Used CLP hazard statements
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.
EUH401 To avoid risks to human health and the environment, comply with the instructions of use.

Used R-phrases
R22 Harmful if swallowed.
R34 Causes burns.
R36/38 Irritating to eyes and skin.
R41 Risk of serious damage to eyes.
R50 Very toxic to aquatic organisms.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Advice on training This material should only be used by persons who are made aware of its hazardous properties and have been instructed in the required safety precautions.

The information provided in this safety data sheet is believed to be accurate and reliable, but uses of the product vary and situations unforeseen by Cheminova A/S may exist. The user has to check the validity of the information under local circumstances.

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Safety, Health, Environment & Quality Department / GHB

