

Material group	1168	Page 1 of 13
Product name	ALIAL 80 WG	January 2020
Safety data sheet according to EU Reg. 1907/2006 as amended		Supersedes September 2018

SAFETY DATA SHEET

ALIAL 80 WG

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** **ALIAL 80 WG**
- 1.2. **Relevant identified uses of the substance or mixture and uses advised against** Can be used as fungicide only.
- 1.3. **Details of the supplier of the safety data sheet** **FMC Agricultural Solutions A/S**
 Thyborønvej 78
 DK-7673 Harbøre
 Denmark
SDS.Ronland@fmc.com
- 1.4. **Emergency telephone number**
Company +45 97 83 53 53 (24 h; for emergencies only)
- Medical emergencies:
- | | |
|-------------------------------------|---|
| Austria: +43 1 406 43 43 | Luxembourg: +352 8002 5500 |
| Belgium: +32 70 245 245 | Netherlands: +31 30 274 88 88 |
| Bulgaria: +359 2 9154 409 | Norway: +47 22 591300 |
| Cyprus: 1401 | Poland: +48 22 619 66 54 |
| Czech Republic: +420 224 919 293 | +48 22 619 08 97 |
| +420 224 915 402 | Portugal: 800 250 250 (in Portugal only) |
| Denmark: +45 82 12 12 12 | +351 21 330 3284 |
| England and Wales: 111 | Romania: +40 21318 3606 |
| Estonia: +372 7943500 | Scotland: +8454 24 24 24 |
| France: +33 (0) 1 45 42 59 59 | Slovakia: +421 2 54 77 4 166 |
| Finland: +358 9 471 977 | Slovenia: +386 41 650 500 |
| Greece: 30 210 77 93 777 | South Africa: +27 83 123 3911 (Bateleur Emergency Response Co.) |
| Hungary: +36 80 20 11 99 | Spain: +34 91 562 04 20 |
| Ireland (Republic): +353 1 837 9964 | Sweden: +46 08-331231 |
| Italy: +39 02 6610 1029 | 112 |
| Latvia: +371 670 42 473 | Switzerland: 145 |
| 112 | Turkey: 114 |
| Lithuania: +370 523 62052 | U.S.A. & Canada: +1 800 / 331 3148 |
| +370 687 53378 | All other countries: +1 651 / 632 6793 (Collect) |

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SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

.....	None
WHO classification	Class U (Unlikely to present acute hazard in normal use)
Health hazards	The product may be mildly to moderately irritating to eyes.
Environmental hazards	The product is toxic to aquatic organisms.

2.2. Label elements

According to EU Reg. 1272/2008 as amended

Product identifier	Alial 80 WG
Hazard pictograms	None
Signal word	None
Hazard statements	None
Precautionary statements	None
Supplementary hazard statements	
EUH210	Safety data sheet available on request.
EUH401	To avoid risks to human health 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.

Excessive dust formation may pose a dust explosion hazard.

♣ 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.

Active ingredient

Fosetyl-aluminium	Content: 83% by weight
CAS name	Phosphonic acid, monoethyl ester, aluminum salt
CAS no.	39148-24-8
IUPAC name(s)	Aluminium tris-O-ethyl phosphonate Ethyl hydrogen phosphonate, aluminium salt
ISO name	Fosetyl-aluminium
EU name	Aluminium triethyl triphosphonate
EC no. (EINECS no.)	254-320-2
EU index no.	006-095-00-5
Molecular weight	354.10
Classification of the ingredient	Eye damage: Category 1 (H318)

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<u>Reportable ingredients</u>	Content (% w/w)	CAS no.	EC no. (EINECS no.)	Classification
Kaolin	5	1332-58-7	310-194-1	Not classified
Sodium diisopropylnaphthalene-sulphonate	3	1322-93-6	215-343-3	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Eye Irrit. 2 (H319) STOT SE 3 (H335)

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	Immediately remove contaminated clothing and footwear. Flush skin with 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 if irritation develops.
Ingestion	Let the exposed person rinse mouth with water and let him/her drink several glasses of water or milk, but not induce vomiting. If vomiting does occur, let him/her rinse mouth and drink water again. Get medical attention immediately.

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.

It may be helpful to show this safety data sheet to physician.

Notes to physician

A specific antidote for exposure to this material is not known. Gastric lavage and/or administration of activated charcoal can be considered. After decontamination, treatment of exposure is as for a general chemical and should be directed at the control of symptoms and the clinical condition.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Dry chemical or carbon dioxide for small fires, water spray or foam for large fires. Avoid heavy hose streams.

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5.2. Special hazards arising from the substance or mixture

The essential breakdown products are carbon monoxide, carbon dioxide and phosphorus pentoxide.

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.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

It is recommended to have a predetermined plan for the handling of spills. Empty, closable vessels for the collection of spills should be available.

In case of large spill (involving 10 tonnes of the product or more):

1. use personal protection equipment; see section 8
2. call emergency telephone no.; see section 1
3. alert authorities.

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.

Stop the source of the spill immediately if safe to do so. Keep unprotected persons away from the spill area. Avoid and reduce vapour or dust formation as much as possible, if appropriate by moistening. Personal contact with the product 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 immediately be swept up or preferably vacuumed up using equipment with high efficiency final filter. Transfer to suitable containers. Clean area with damp cloth and/or strong industrial detergent and much water. Absorb wash liquid onto inert absorbent such as universal binder, Fuller's earth, bentonite or other absorbent clay and transfer contaminated absorbent to suitable containers. The used containers should be properly closed and labelled.

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Large 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

- 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. The material should be handled 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.

Remove contaminated clothing immediately. Wash thoroughly after handling. Before removing gloves, wash them with water and soap. After work, take off all work clothes and footwear. Take a shower, using water and soap. Wear only clean clothes when leaving job. Wash protective clothing and protective equipment with water and soap after each use.

Do not discharge to the environment. Do not contaminate water when disposing of equipment wash waters. Collect all waste material and 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 under normal conditions of warehouse storage.

Store 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. A warning sign reading "POISON" is recommended. 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)** The 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.

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♣ SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Personal exposure limits To our knowledge, no personal exposure limits have been established for fosetyl-aluminium.

Kaolin		Year	
		2015	2015
	ACGIH (USA) TLV	2 mg/m ³ , respirable fraction of the aerosol	
	OSHA (USA) PEL	15 mg/m ³ , total dust	
		5 mg/m ³ , respirable fraction	
	EU, 2000/39/EC as amended	2017	Not established
	Germany, MAK	2014	Not established
	HSE (UK) WEL	2011	2 mg/m ³ , respirable dust

However, other exposure limits may be defined by local regulations and must be observed.

Fosetyl-Al

DNEL Not established
 The EFSA has established an AOEL of 14 mg/kg bw/day
 PNEC, aquatic environment 0.17 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.

In cases of incidental high exposure, maximal personal protection may be necessary, such as respirator, face mask, chemical resistant coveralls.

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 does not automatically present an airborne exposure concern when handled carefully, but in the event of an accidental discharge of the material which produces a heavy vapour or dust, workers must put on officially approved respiratory protection equipment with a universal filter type including particle filter.



Protective gloves

Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber. The breakthrough times of these materials for the product are unknown, but it is expected that they will give adequate protection.

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Eye protection

Wear safety glasses. It is recommended to have an eye wash fountain immediately available in the workplace when there is a potential for eye contact.



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 excessive 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	White solid (granules)
Odour	Slight
Odour threshold	Not determined
pH	1% dispersion in water: > 3.5
Melting point/freezing point	Decomposes without melting
Initial boiling point and boiling range	No boiling point
Flash point	> 61°C
Evaporation rate	Not determined
Flammability (solid/gas)	Not highly flammable
Upper/lower flammability or explosive limits	Not determined
Vapour pressure	Fosetyl-aluminium : < 10 ⁻⁷ Pa at 25°C
Vapour density	Not determined
Relative density	Not determined
Solubility(ies)	Bulk or tap density: 0.62 g/cm ³ Solubility of fosetyl-aluminium at 20°C in:
	Methanol 850 mg/l
	xylene 1 mg/l
	ethyl acetate < 1 mg/l
	n-heptane < 1 mg/l
	water approx. 110 g/l
Partition coefficient n-octanol/water	Fosetyl-aluminium : log K _{ow} = -2.1 at 21-23°C
Autoignition temperature	Not auto-flammable
Decomposition temperature	Above 200°C
Viscosity	Not determined
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** To our knowledge, the product has no special reactivities.
- 10.2. **Chemical stability** The product is stable during normal handling and storage at ambient temperatures.
- 10.3. **Possibility of hazardous reactions** None known.
- 10.4. **Conditions to avoid** Heating of the product will produce harmful and irritant vapours.
 The product decomposes in humid conditions.
- 10.5. **Incompatible materials** Strong bases, strong oxidising and reducing agents
- 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 not considered as harmful by single exposure. * The acute toxicity is measured as:
- Route(s) of entry - ingestion LD₅₀, oral, rat: 6250 mg/kg
 - skin LD₅₀, dermal, rat: 3750 mg/kg
 - inhalation LC₅₀, inhalation, rat: not available
- Skin corrosion/irritation Not irritating to skin. *
- Serious eye damage/irritation Mildly to moderately irritating to eyes. *
- Respiratory or skin sensitisation ... Not a skin sensitizer. *
- Germ cell mutagenicity The product contains no ingredient known to be mutagenic. *
- Carcinogenicity The product contains no ingredient known to be carcinogenic. *
- Reproductive toxicity The product contains no ingredient found to have adverse effects on reproduction. *
- STOT – single exposure To our knowledge, specific effects after single exposure have not been observed. *
- STOT – repeated exposure The following is found for the active ingredient fosetyl-Al:
 Target organ: no target organ
 NOAEL: 20000 ppm (1424 mg/kg bw/day) in a 90-day rat study (method OECD 408). At this dose level only incidental and minor changes were seen. *

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Aspiration hazard	The product does not present an aspiration pneumonia hazard. *
Symptoms and effects, acute and delayed	Primarily irritation
<u><i>Fosetyl-Al</i></u>	
Toxicokinetics, metabolism and distribution	After oral intake, fosetyl-aluminium is rapidly absorbed and widely distributed in the body. Metabolism is limited and excretion is rapid as well, mainly within 24 hours. There is no evidence of accumulation.
Acute toxicity	The substance is not harmful by single exposure. * The acute toxicity is measured as:
Route(s) of entry	- ingestion LD ₅₀ , oral, rat: > 7080 mg/kg (method OECD 401)
	- skin LD ₅₀ , dermal, rat: > 2000 mg/kg (method OECD 402)
	- inhalation LC ₅₀ , inhalation, rat: > 5.11 mg/l/4 h (method OECD 403)
Skin corrosion/irritation	Not irritating to skin (method OECD 404). *
Serious eye damage/irritation	The substance can cause severe irritation to eyes (method OECD 405).
Respiratory or skin sensitisation ...	The substance did not cause skin sensitisation in guinea pigs (method OECD 406). *
<u><i>Sodium diisopropylnaphthalenesulphonate</i></u>	
Acute toxicity	The substance is harmful by inhalation and ingestion.
Route(s) of entry	- ingestion LD ₅₀ , oral, rat: > 600 mg/kg
	- skin LD ₅₀ , dermal, rat: not available
	- inhalation LC ₅₀ , inhalation, rat: not available
Skin corrosion/irritation	May be mildly irritating to skin. *
Serious eye damage/irritation	Irritating to eyes.
Respiratory or skin sensitisation ...	Not expected to be sensitising based on QSAR evaluation. *
STOT – single exposure	Irritating to airways.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity	The product is toxic to algae. It is not considered as harmful to fish, aquatic invertebrates, birds, soil micro- and macroorganisms and insects.
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The ecotoxicity of the active ingredient **fosetyl-aluminium** is measured as:

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- Fish	Rainbow trout (<i>Oncorhynchus mykiss</i>)	96-h LC ₅₀	> 122 mg/l
		28-day NOEC	100 mg/l
	Bluegill sunfish (<i>Lepomis macrochirus</i>)	96-h LC ₅₀	> 60 mg/l
- Invertebrates	Daphnids (<i>Daphnia magna</i>)	48-h EC ₅₀	> 100 mg/l
		21-day NOEC	17 mg/l
- Algae	Green algae (<i>Scenedesmus subspicatus</i>)	72-h EC ₅₀	5.9 mg/l
- Plants	Duckweed (<i>Lemna gibba</i>)	14-day NOEC	20.4 mg/l
- Birds	Japanese quail (<i>Coturnix coturnix japonica</i>)	LD ₅₀	4997 mg/kg
- Earthworms	<i>Eisenia foetida</i>	LC ₅₀	> 1000 mg/kg soil
- Bees	Honey bee (<i>Apis mellifera</i>)	48-h LD ₅₀ , oral	> 140 µg/bee
		48-h LD ₅₀ , contact	> 100 µg/bee

12.2. Persistence and degradability

Fosetyl-aluminium is readily biodegradable. Primary degradation half-lives are found to be less than 1 day in aerobic soil. Degradation occurs both aerobically as well as anaerobically.

The product contains minor amounts of not readily biodegradable components, which may not be degradable in waste water treatment plants.

12.3. Bioaccumulative potential

See section 9 for octanol-water partition coefficient.

Due to its high solubility in water, **fosetyl-aluminium** is not expected to bioaccumulate.

12.4. Mobility in soil

Fosetyl-aluminium is mobile in the environment, but is degraded rapidly.

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 possible, the material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing.

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Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Disposal of packaging

It is recommended to consider possible ways of disposal in the following order:

1. Reuse or recycling should first be considered. Reuse is prohibited except by the authorisation holder. 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 as a last resort. 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

- | | |
|---|---|
| 14.1. UN number | Not classified as hazardous material for transport |
| 14.2. UN proper shipping name | Not applicable |
| 14.3. Transport hazard class(es) | Not applicable |
| 14.4. Packing group | Not applicable |
| 14.5. Environmental hazards | May have hazardous properties in the environment. |
| 14.6. Special precautions for user | Avoid any unnecessary contact with the product. Misuse can result in damage to health. Do not discharge to the environment. |
| 14.7. Transport in bulk according to Annex II of MARPOL and the IBC code | The product is not transported in bulk by ship. |

SECTION 15: REGULATORY INFORMATION

- | | |
|---|--|
| 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture | To our knowledge, no special regulations apply.

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. |

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♣ SECTION 16: OTHER INFORMATION

Relevant changes in the safety data sheet

Minor corrections only

List of abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
AOEL	Acceptable Operator Exposure Level
CAS	Chemical Abstracts Service
Dir.	Directive
DNEL	Derived No Effect Level
EC	European Community
EC ₅₀	50% Effect Concentration
EFSA	European Food Safety Authority
EINECS	European INventory of Existing Commercial Chemical Substances
GHS	Globally Harmonized classification and labelling System of chemicals, Fifth revised edition 2013
HSE	Health & Safety Executive, UK
IBC	International Bulk Chemical code
ISO	International Organisation for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC ₅₀	50% Lethal Concentration
LD ₅₀	50% Lethal Dose
MAK	Maximale Arbeitsplatz-Konzentration
MARPOL	Set of rules from the International Maritime Organisation (IMO) for prevention of sea pollution
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Cooperation and Development
OSHA	Occupational Safety and Health Administration
PBT	Persistent, Bioaccumulative, Toxic
PEL	Personal Exposure Limit
PNEC	Predicted No Effect Concentration
QSAR	Quantitative Structure-Activity Relationship
Reg.	Regulation
STOT	Specific Target Organ Toxicity
TLV	Threshold Limit Value
vPvB	very Persistent, very Bioaccumulative
WG	Water dispersible Granule
WEL	Workplace Exposure Limit
WHO	World Health Organisation

References

Data measured on the product are unpublished company data. Data on ingredients are available from published literature and can be found several places.

Method for classification

Test data

Used hazard statements

H302 Harmful if swallowed.



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- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H335 May cause respiratory irritation.
- EUH210 Safety data sheet available on request.
- EUH401 To avoid risks to human health and the environment, comply with the instructions of use.

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 FMC Corporation may exist. The user has to check the validity of the information under local circumstances.

Prepared by: FMC Agricultural Solutions A/S / GHB