

Thyborønvej 78 DK-7673 Harboøre

Denmark +45 9690 9690 www.fmc.com

CVR No. DK 12 76 00 43

Product code	6523	Page 1 of 12
Product name	Galben R 4-33	December 2018
		Supersedes April 2017

SAFETY DATA SHEET Galben R 4-33

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 Galben R 4-33

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

CHEMINOVA A/S, a subsidiary of FMC Corporation

Thyborønvej 78 DK-7673 Harboøre

Denmark

SDS.Ronland@fmc.com

1.4. Emergency telephone number

Medical emergencies:

Luxembourg: +352 8002 5500 Austria: +43 1 406 43 43 Netherlands: +31 30 274 88 88 Belgium: +32 70 245 245 Norway: +47 22 591300 Bulgaria: +359 2 9154 409 Poland: +48 22 619 66 54 Cyprus: 1401

Czech Republic: +420 224 919 293

+48 22 619 08 97

+420 224 915 402 Portugal: 808 250 143 (in Portugal only)

Denmark: +45 82 12 12 12 +351 21 330 3284 England and Wales: 111 Romania: +40 21318 3606 Scotland: +8454 24 24 24 Estonia: +372 7943500 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

South Africa: +27 83 123 3911 (Bateleur Emergency Response Co.) Greece: 30 210 77 93 777

Spain: +34 91 562 04 20 Hungary: +36 80 20 11 99 Sweden: +46 08-331231 Ireland (Republic): +353 1 837 9964

Italy: +39 02 6610 1029 112 Switzerland: 145 Latvia: +371 670 42 473 Turkey: 114 112

U.S.A. & Canada: +1 800 / 331 3148 Lithuania: +370 523 62052

All other countries: +1 651 / 632 6793 (Collect) +370 687 53378

For leak, fire, spill or accident emergencies:

U.S.A.: +1 800 / 424 9300 (CHEMTREC)

All other countries: +1 703 / 527 3887 (CHEMTREC - Collect)



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Product code	6523	Page 2 of 12
Product name	Galben R 4-33	
		December 2018

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Eye damage: category 1 (H318)

Sensitisation – skin: Category 1 (H317)

Hazards to the aquatic environment, acute: Category 1 (H400)

chronic: Category 1 (H410)

Health hazards The product can cause serious eye irritation and allergic sensitisation.

Environmental hazards The product is very toxic to aquatic organisms.

2.2. Label elements

According to EU Reg. 1272/2008 as amended

Product identifier Galben R 4-33

Hazard pictograms (GHS05, GHS07, GHS09)







Signal word Danger

Hazard statements

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

Supplementary hazard statement

P310

instructions of use.

Precautionary statements

P261 Avoid breathing vapours.

P280 Wear protective gloves and eye 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. Immediately call a POISON CENTER or doctor/physician.

P362+P364 Take off contaminated clothing and wash it before reuse.

P501 Dispose of contents/container as hazardous waste.

or vPvB.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

12
2018

Active ingredients

Benalaxyl Content: < 5% w/w

IUPAC name(s) Methyl N-phenylacetyl-N-2,6-xylyl-DL-alaninate

 ISO name/EU name
 Benalaxyl

 EC no. (EINECS no.)
 275-728-7

 EU index no.
 616-104-00-X

Classification of the ingredient Hazards to the aquatic environment, acute: Category 1 (H400)

chronic: Category 1 (H410)

Copper oxychloride Content: < 60% w/w

IUPAC name(s) Dicopper chloride trihydroxide

Classification of the ingredient Acute oral toxicity: Category 4 (H302)

Acute inhalation toxicity: Category 4 (H332)

Hazards to the aquatic environment, acute: Category 1 (H400)

chronic: Category 1 (H410)

SECTION 4: FIRST AID MEASURES

. ..

4.1.	D	es	cr	ıptıon	01	nrst	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.

and all skin washed thoroughly with water and soap. Get medical

attention if any symptom develops.

> occasionally opening eyelids, until no evidence of chemical remains. Remove contact lenses after a few minutes and rinse again. See

physician immediately.

Ingestion Let the exposed person rinse mouth and drink several glasses of water

or milk, but not induce vomiting. If vomiting does occur, let him/her rinse mouth and drink fluids again. Get medical attention immediately.

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

Irritation and possibly allergic reactions.



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Product code	6523	Page 4 of 12
Product name	Galben R 4-33	
		December 2018

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

Immediate medical attention is required in case of ingestion or eye contact.

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 the administration of activated charcoal can be considered. After decontamination, treatment 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.

5.2. Special hazards arising from the substance or mixture

The essential breakdown products are volatile, malodorous, toxic, irritant and inflammable compounds such as hydrogen chloride, nitrogen oxides, carbon monoxide, carbon dioxide and various chlorinated organic compounds

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, sealable 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 rubber boots.

Stop the source of the spill immediately if safe to do so. Keep unprotected persons away from the spill area.

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.



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Product code	6523	Page 5 of 12
Product name	Galben R 4-33	
		December 2018

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).

Surface water drains should be covered if appropriate. 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 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 collect in suitable containers. The used containers should be properly closed and labelled.

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 (0 - 40° C). Protect from frost and extreme heat.



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Product code	6523	Page 6 of 12
Product name	Galben R 4-33	D 1 2010
		December 2018

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.

♣ SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8 1	Control	parameters
0.1.	Control	par ameters

product. However, personal exposure limits defined by local

regulations may exist and must be observed.

Benalaxyl

EFSA has established an AOEL of 0.06 mg/kg bw/day

PNEC, aquatic environment 0.01 µg/l

Copper oxychloride

DNEL Not established

EFSA has established an AOEL of 0.073 mg/kg bw/day

PNEC, aquatic environment 13 µg/l

> 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.

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

coveralls.

Respiratory protection

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, nitrile rubber or viton. The breakthrough times of these materials for the product are unknown, but it is expected that they will give

adequate protection.



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Product code	6523	Page 7 of 12
Product name	Galben R 4-33	
		December 2018



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.

: not measurable because of low solubility

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on physical and chemical properties

Appearance Green solid (powder) Odour Chemical smell Odour threshold Not determined

pH 1% dispersion in water: 8.11

Melting point/freezing point Not determined Initial boiling point and boiling range Not determined Flash point Not determined Evaporation rate Not determined Not highly flammable Flammability (solid/gas)

Upper/lower flammability or

explosive limits Not determined Not determined Vapour pressure Vapour density Not determined Relative density Not available Solubility(ies) Not determined

Partition coefficient n-octanol/water Benalaxyl : $\log K_{ow} = 3.54$ at $20^{\circ}C$ and pH 6 Copper oxychloride

Not determined Autoignition temperature Decomposition temperature Not determined Viscosity Not determined Explosive properties Not explosive Oxidising properties Not oxidising

9.2. Other information

Miscibility The product is dispersible in water.

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.



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com

CVR No. DK 12 76 00 43

Product code	6523	Page 8 of 12
Product name	Galben R 4-33	
		December 2018

10.3. Possibility of hazardous reactions None known.

10.4. Conditions to avoid Heating of the product will evolve harmful and irritant vapours.

10.5. Incompatible materials None known.

10.6. Hazardous decomposition products See subsection 5.2.

SEC

SECT	TION 11: TOXICOLO	OGICAL INFOR	MATION
	Information on toxic		* = Based on available data, the classification criteria are not met.
	Product Acute toxicity		The product is not considered as harmful by single exposures. * The acute toxicity is measured as:
	Route(s) of entry	- ingestion	LD ₅₀ , oral, rat: > 2000 mg/kg
		- skin	LD ₅₀ , dermal, rat: > 2000 mg/kg
		- inhalation	LC_{50} , inhalation, rat: > 5.24 mg/l/4 h
	Skin corrosion/irritati	on	Not irritating to skin. *
	Respiratory or skin sensitisation		Severely irritating to eyes with the potential to cause permanent eye damage.
			May cause skin sensitisation.
			The product contains no ingredients known to be mutagenic. *
	Carcinogenicity		The product contains no ingredients known to be carcinogenic. *
	Reproductive toxicity		The product contains no ingredients found to have adverse effects on reproduction. *
			To our knowledge, no specific effects have been observed after single exposure. *
			The following is measured on the active ingredient copper oxychloride (measured on a similar compound): Target organ: blood NOEL: 1680 ppm (28 mg/kg bw/day) in a 90-day rat study based on haematological changes. *
	Aspiration hazard		The product does not present an aspiration pneumonia hazard. *
	Symptoms and effects, acute and delayed		Irritation and possibly allergic reactions.

Benalaxyl

Toxicokinetics, metabolism and distribution

Benalaxyl is rapidly absorbed after oral administration and widely distributed in the body. It is excreted almost completely within a



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Product code	6523	Page 9 of 12
Product name	Galben R 4-33	D 1 2010
		December 2018

		week. It is extensively metabolised. There is no evidence of accumulation.		
Acute toxicity		Benalaxyl is not considered harmful by single exposures. * The acute toxicity is measured as:		
Route(s) of entry - inge	estion	LD ₅₀ , oral, rat: 4200 mg/kg		
- skin	1	LD_{50} , dermal, rat: $> 5000 \text{ mg/kg}$		
- inha	alation	LC ₅₀ , inhalation, rat: not available		
Skin corrosion/irritation		Not irritating to skin. *		
Serious eye damage/irritation		Not irritating to eyes (method OECD 405). *		
Respiratory or skin sensitisation		Not a skin sensitizer. *		
<u>Copper oxychloride</u> Toxicokinetics, metabolism and distribution		Absorption is dependent on diet. After absorption, the substance is mainly distributed to the liver. Metabolism does not occur. Excretion is rapid, via the bile. Accumulation does not occur, except in cases of disease.		
Acute toxicity		The substance may be harmful by ingestion or inhalation, but is not considered harmful by dermal contact. The acute toxicity is measured as:		
Route(s) of entry - inge	estion	LD ₅₀ , oral, rat (male): 1083 - 1796 mg/kg (method OECD 401)		
		LD ₅₀ , oral, rat (female): 950 - 2006 mg/kg		
- skin	ı	$LD_{50},$ dermal, rat: >2000 mg/kg (method OECD 402) *		
- inha	alation	LC50, inhalation, rat: 4.74 mg/l/4 h (method OECD 403)		
Skin corrosion/irritation		May be slightly irritating to skin (method OECD 404). *		
Serious eye damage/irritation		May be moderately irritating to eyes (method OECD 405). *		
Respiratory or skin sensitisation		Not a skin sensitizer (method OECD 406). *		

SECTION 12: ECOLOGICAL INFORMATION

The measured ecotoxicity of the product is measured as:

- Fish	Rainbow trout (Oncorhynchus mykiss)	96-h LC ₅₀ : 24 mg/l
- Invertebrates	Daphnids (Daphnia magna)	48-h EC ₅₀ : 22 mg/l
- Algae	Green algae (Pseudokirchneriella subcapitata)	72-h EC ₅₀ : 0.2 mg/l



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Product code	6523	Page 10 of 12
Product name	Galben R 4-33	
		December 2018

12.2. Persistence and degradability **Benalaxyl** is not readily biodegradable in the environment, but it is degraded slowly. Primary degradation half-lives vary with circumstances, but are usually a few to several months in aerobic soil and water. Copper oxychloride is not degradable. 12.3. Bioaccumulative potential See section 9 for octanol-water partition coefficients. Benalaxyl may have a potential to bioaccumulate if continuous exposure is maintained. Bioaccumulation of **copper oxychloride** is not expected. 12.4. **Mobility in soil** **Benalaxyl** is not mobile in soil. Under normal conditions **copper** oxychloride is weakly mobile in soil. 12.5. Results of PBT and vPvB None of the ingredients meets the criteria for being PBT or vPvB. assessment

***** SECTION 13: DISPOSAL CONSIDERATIONS

12.6. Other adverse effects

is not feasible, the material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with

Other relevant hazardous effects in the environment are not known.

flue gas scrubbing.

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



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com

CVR No. DK 12 76 00 43

Product code	6523	Page 11 of 12
Product name	Galben R 4-33	
		December 2018

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

14.2. **UN proper shipping name** Environmentally hazardous substance, solid, n.o.s. (copper

oxychloride, benalaxyl)

14.3. Transport hazard class(es) 9

14.4. **Packing group** III

14.5. **Environmental hazards** Marine pollutant

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 73/78 and the

IBC code The product should not be transported in bulk by ship.

SECTION 15: REGULATORY INFORMATION

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

Seveso category (Dir. 2012/18/EU): dangerous for the environment.

Young people under the age of 18 are not allowed to work with the

substance.

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

AOEL Acceptable Operator Exposure Level

CAS Chemical Abstracts Service

Dir. Directive

DNEL Derived No Effect Level
 EC European Community
 EC₅₀ 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



Thyborønvej 78 DK-7673 Harboøre Denmark +45 9690 9690 www.fmc.com CVR No. DK 12 76 00 43

Product code	6523	Page 12 of 12
Product name	Galben R 4-33	
		December 2018

	NOEL n.o.s. OECD PBT PNEC Reg. STOT vPvB WHO	International Bulk Chemical code International Union of Pure and Applied Chemistry 50% Lethal Concentration 50% Lethal Dose Set of rules from the International Maritime Organisation (IMO) for prevention of sea pollution No Observed Effect Level Not otherwise specified Organisation for Economic Cooperation and Development Persistent, Bioaccumulative, Toxic Predicted No Effect Concentration Regulation Specific Target Organ Toxicity very Persistent, very Bioaccumulative World Health Organisation
References		sured on the product are unpublished company data. Data on its are available from published literature and can be found aces.
Method for classification	Sensitisati	ge: test data ion – skin: test data o the aquatic environment, acute: test data chronic: calculation rules
Used hazard statements	H302 H317 H318 H332 H400 H410 EUH401	Harmful if swallowed. May cause an allergic skin reaction. Causes serious eye damage. Harmful if inhaled. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. To avoid risks to human health and the environment, comply with the instructions of use.
Advice on training		rial should only be used by persons who are made aware of ous properties and have been instructed in the required cautions.

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 Corporation / Cheminova A/S / GHB