

### Von FSC International verbotene Wirkstoffe

In der Liste aufgeführt sind Wirkstoffe nach Typ 1A und 1B der Weltgesundheitsorganisation WHO, chlorierte Hydrokarbonate, persistente, toxische oder Pestizide mit biologisch aktiven, sich in der Nahrungskette anreichernden Abbauprodukten, sowie alle durch internationale Vereinbarungen verbotenen Pestizide (Auszug aus der Instruktion WI-16, SGS Qualifor, Begründungen in englischem Original).

Die den Wirkstoffen entsprechenden, in der Schweiz zugelassenen Produkte (Handelsbezeichnungen) und Hersteller finden Sie auch im Pflanzenschutzmittelverzeichnis des Bundes, welches periodisch überarbeitet wird und im Internet publiziert ist unter: <http://www.blw.admin.ch/psm/wirkstoffe/index.html?lang=de>. Falls Sie bei einem von Ihnen zur Verwendung vorgesehenen Produkt unsicher sind, wenden Sie sich bitte an den Gruppenmanager der Zertifizierungsgruppe ARTUS.

Name des Wirkstoffs	Grundlage für die Integration in die FSC Liste der „hoch gefährlichen“ Wirkstoffe	Aufnahme in Liste	Verboten seit
2-(2,4-DP), dma salt (=dichlorprop, dma salt)	Chlorinated hydrocarbon(PM); Endocrine disrupting chemical (TRI Developmental toxin)	2005	2005
2,4,5-T	Organochlorine. Toxicity: medium to high in mammals; Often contaminated with dioxin.	2002	2002
2,4-D, 2-ethylhexyl ester	Chlorinated hydrocarbon(PM)	2005	2005
3-Chloro-1,2-propanediol	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Acrolein	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Aldicarb	WHO Table 1, Class Ia.	WHO (2002)	2002
Aldrin	Chlorinated hydrocarbon	2002	2002
Allyl alcohol	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Alpha-cypermethrin	Acute aquatic toxicity (PM); Chlorinated hydrocarbon (PM); [BCF (aquatic plants, fish, insects, phytoplankton)?]	2005	2005
Aluminium phosphide	Toxicity similar to sodium cyanide. WHO Table 7	2002	2002
Amitrole	Carcinogenicity (Group B2, US EPA)	2005	2005
Azinphos-ethyl	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Azinphos-methyl	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Atrazine	Endocrine Disruptors category 1 (European Union, 1999)	2007/05	2007/12/01
Benomyl	Persistence: 6 - 12 months. Toxicity: LD50 100 mg/kg. LC50 60 - 140 microg/l. Mutagen	2002	2002
Blasticidin-S	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Brodifacoum	WHO Table 1, Class Ia	2002	2002
Bromadialone	WHO Table 1, Class Ia	2002	2002
Bromethalin	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Butocarboxim	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Butoxycarboxim	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Cadusafos	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Calcium arsenate	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Calcium cyanide	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Captafol	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Carbaryl	Toxicity: LD50 of 100 mg/kg in mice.	2002	2002
Carbofuran	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Carbosulfan	Acute toxicity (oral): Acute oral LD50 for male rats 250, female	2007/05	2007/12/01

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	rats 185 mg/kg. Aquatic toxicity: Daphnia LC50 (48 h) 1.5 µg/l. Bioaccumulation: Kow logP = 5.4 (e-PM-2006-2007)		
Chlordane	Organochlorine. Persistence: half-life of 4 years. Toxicity: oral LD50 in rabbits approx. 20-300 mg/kg.	2002	2002
Chlorethoxyfos	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Chlorfenvinpho	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Chlormephos	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Chlorophacinone	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Chlorothalonil	Acute aquatic toxicity (PM). Chlorinated hydrocarbon containing nitrogen but not a pyridine (PM) (no exemption); [BCF (molluscs, phytoplankton)?]	2005	2005
Chlorpyrifos	Bioaccumulation: Kow logP = 4.7 (e-PM-2006-2007). Acute toxicity (oral): Acute oral LD50 for rats 135-163 mg/kg; Aquatic toxicity: Daphnia LC50 (48 h) 1.7 µg/l.	2007/05	2007/12/01
Coumaphos	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Coumatetralyl	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Cyfluthrin	Acute aquatic toxicity (PM); Chlorinated hydrocarbon (PM)	2005	2005
Cypermethrin	Acute aquatic toxicity (PM); Chlorinated hydrocarbon (PM); [BCF (aquatic plants, fish, insects, phytoplankton)?]	2005	2005
DDT	Chlorinated hydrocarbon	2002	2002
Deltamethrin	Bioaccumulation: Kow logP = 4.6 (e-PM-2006-2007). Acute toxicity (oral): Acute oral LD50 for rats ranges from 135 to >5000 mg/kg; Aquatic toxicity: Daphnia LC50 (48 h) 3.5 µg/l	2007/05	2007/12/01
Demeton-S-methyl	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Diazinon	Toxicity: 0.0009 mg/kg/day; LD50 2.75 - 40.8 mg/kg.	2002	2002
Dicamba, dma salt	Chlorinated hydrocarbon(PM); Endocrine disrupting chemical (TRI Developmental toxin)	2005	2005
Dichlorvos	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Dicofol	Persistence: 60 days; Biomagnification: log Kow 4.28.	2002	2002
Dicrotophos	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Dieldrin	Chlorinated hydrocarbon	2002	2002
Dienochlor	Organochlorine; Toxicity: LC50 of 50 microg/l in aquatic environments.	2002	2002
Difenacoum	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Difethialone	WHO Table 1, Class Ia.	2002	2002
Diflubenzuron	Acute aquatic toxicity (PM); Chlorinated hydrocarbon (PM); [BCF (aquatic plants, terrestrial plants, phytoplankton, zooplankton)?]	2005	2005
Dimethoate	Toxicity: RfD 0.0002 mg/kg/day; LD50: 20 mg/kg in pheasants.	2002	2002
Dinoterb	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Diphacinone	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Diquat dibromide	Reference dose (chronic), as the acceptable daily intake (see 3.1) (WHO 2003); [BCF (aquatic plants, fish, zooplankton)?]	2005	2005
Disulfoton	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Diuron	Persistence (PM); Chlorinated hydrocarbon (PM); [BCF (aquatic plants, fish, insects, molluscs, phytoplankton, zooplankton)?]; Chlorinated hydrocarbon (PM). [BCF (molluscs, phytoplankton, zooplankton)?]	2005	2005
DNOC	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Edifenphos	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Endosulfan	Organochlorine; Toxicity: LC50 of 50 microg/l in aquatic environments.	2002	2002

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Endrin	Organochlorine; Toxicity: LC50 of 50 microg/l in aquatic environments. Toxicity: LD50 <200 mg/kg. Biomagnification high in fish.	2002	2002
EPN	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Epoxiconazole	Bioaccumulation: Kow logP = 3.33 (e-PM-2006-2007)	2007/05	2007/12/01
Esfenvalerate	Acute aquatic toxicity (PM); Persistence (PM); Chlorinated hydrocarbon (PM); [BCF (aquatic plants, fish, molluscs, phytoplankton, zooplankton)?]	2005	2005
Ethiofencarb	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Ethion	Bioaccumulation: Kow logP =4.28 (e-PM-2006-2007)	2007/05	2007/12/01
Ethoprophos	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Famphur	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Fenamiphos	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Fenitrothion	Bioaccumulation: Kow logP = 3.43 (e-PM-2006-2007)	2007/05	2007/12/01
Fipronil	Bioaccumulation: Kow logP = 4.0(e-PM-2006-2007), Acute toxicity (oral): Acute oral LD50 for rats 97 mg/kg(e-PM-2006-2007)	2007/05	2007/12/01
Fluazifop-butyl	Bioaccumulation: Kow logP=4.5 (e-PM-2006-2007)	2007/05	2007/12/01
Flocoumafen	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Flucythrinate	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Flufenoxuron	Bioaccumulation: Kow logP = 4.0 (e-PM-2006-2007); Aquatic toxicity:LC50 (96 h) for rainbow trout >4.9 µg/l.	2007/05	2007/12/01
Fluoroacetamide	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Formetanate	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Furathiocarb	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Gamma-HCH, lindane	Chlorinated hydrocarbon	2002	2002
Heptachlor	Organochlorine; Persistence: half-life 250 days; Toxicity: LD50 100-220 mg/kg in rats, 30-68 mg/kg in mice; RfD 0.005 mg/kg/day; Biomagnification: Log Kow 5.44.	2002	2002
Heptenophos	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Hexachlorobenzene	WHO Table 1, Class Ia.	2002	2002
Hexazinone	Persistence (PM). [BCF (fish)?]	2005	2005
Hydramethylnon	Acute aquatic toxicity (PM); Endocrine disrupting chemical (TRI Developmental toxin, TRI Reproductive Toxin)	2005	2005
Isoxaben	Bioaccumulation: Kow logP = 3.94 (e-PM-2006-2007)	2007/05	2007/12/01
Isoxathion	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Lamba-cyhalothrin	Acute toxicity (oral):Acute oral LD50 for male rats 79, female rats 56 mg/kg. Bioaccumulation: Kow logP = 7 (e-PM-2006-2007)	2007/05	2007/12/01
Lead arsenate	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Mancozeb	Toxicity: RfD 0.003 mg/kg/day.	2002	2002
Mecarbam	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Mercuric chloride	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Mercuric oxide	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Metam sodium	Carcinogenicity (Group 2B, EPA); Endocrine disrupting chemical (TRI Developmental toxin)	2005	2005
Methamidophos	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Methodathion	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Methiocarb	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Methomyl	WHO Highly hazardous (Class IB)	WHO (2007)	2002

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Methoxychlor	Persistence: half-life 60 days; Toxicity: RfD 0.005 mg/kg/day; LC50 <0.020 mg/l for trout.	2002	2002
Methylarsonic acid (mono-sodium methanearsenate, MSMA)	Chemical class (heavy metals); [BCF (aquatic plants, crustaceans, fish, molluscs, phytoplankton, zooplankton)?]	2005	2005
Methylbromide	Reference dose (US EPA 1993)	2005	2005
Mevinphos	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Mirex	Organochlorine; Persistence: half-life > 100 days; Toxicity: LD50 50-5000 mg/kg; Carcinogen; Bioaccumulation high.	2002	2002
Monocrotophos	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Naled	Acute aquatic toxicity (PM); Endocrine disrupting chemical (TRI Developmental toxin)	2005	2005
Nicotine	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Omethoate	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Oryzalin	Persistence: Half-life 20-128 days; Toxicity: LD50 100 mg/kg in birds.	2002	2002
Oxamyl	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Oxydemeton-methyl	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Oxydemeton-methyl, Metasystox	WHO Table 2, Class Ib.	2002	2002
Oxyfluorfen	Toxicity: RfD 0.003 mg/kg/day; Log Kow 4.47	2002	2002
Paraquat	Persistence: > 1000 days; Toxicity: RfD 0.0045 mg/kg/day; Log Kow 4.47; Reference dose (US EPA 1993). [BCF (aquatic plants, fish, phytoplankton)?]	2002	2002
Parathion	WHO Table 1, Class Ia.	2002	2002
Parathion-methyl	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Paris green	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Pendimethalin	Persistence (PM); The log Kow of pendimethalin is 5.2, above the threshold, although it is a root-contact herbicide and thus has no systemic activity, bio-magnification is likely to be small, however, the potential for bio-accumulation of a pesticide is assessed independently of persistence. Persistent chemicals may be transferred to plants, to ground water and surface waters where they can be absorbed by other organisms. The US EPA rates Pendimethalin as a persistent, bio-accumulative and toxic (PBT) chemical 3.	2005	2005
Pentachlorophenol	WHO Table 2, Class Ib.	2002	2002
Permethrin	Toxicity: Log Kow 6.10; LC50 0.0125 mg/litre in rainbow trout.	2002	2002
Phenylmercury acetate	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Phorate	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Phosphamidon	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Propaquizafop	Bioaccumulation:Kow logP = 4.78 (e-PM-2006-2007)	2007/05	2007/12/01
Propetamphos	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Propyzamide	Bioaccumulation: Kow logP = 3.3 (e-PM-2006-2007)	2007/05	2007/12/01
Quintozene	Organochlorine; Persistence: 1 - 18 months; Toxicity: high; Biomagnification: Log Kow 4.46.	2002	2002
Simazine	Toxicity: RfD 0.005 mg/kg/day	2002	2002
Sodium arsenite	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Sodium cyanide	WHO Table 2, Class Ib; Acute toxicity to mammals (WHO); Acute aquatic toxicity (PANNA 2002). [BCF (fish)?]	2002	2002
Sodium fluoroacetate	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Sodium Mono fluoroaceta-	WHO Table 1, Class Ia	2002	2002

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Strychnine	WHO Table 1, Class Ib; Bioaccumulation: Kow logP = 4.0 (e-PM-2006-2007). Acute toxicity (oral): Acute oral LD50 for rats 1-30 mg/kg (e-PM-2006-2007)	2007/05	2007/12/01
Sulfluramid	Bioaccumulation: Kow logP >6.8 (e-PM-2006-2007)	2007/05	2007/12/01
Sulfotep	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Tebufenozide	Persistence (PM)	2005	2005
Tebupirimfos	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Tefluthrin	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Terbufos	WHO Extremely hazardous (Class IA)	WHO (2007)	2002
Terbumeton	Persistence (PM); Reference dose (US EPA 1993)	2005	2002
Terbuthylazine	Reference dose (US EPA, Reregistration Eligibility Decision, p. 13, 1995); Chlorinated triazine: exemption [BCF (phytoplankton, zooplankton)?]	2005	2002
Terbutryn	Reference dose (US EPA 1993) [BCF (aquatic plants, insects, phytoplankton)?]	2005	2002
Thallium sulphate	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Thiodicarb	Acute toxicity (oral): Acute oral LD50 for rats 66 (in water), Aquatic toxicity: Daphnia LC50 (48 h) 27 µg /l; Carcinogenicity: Group B2, US EPA,	2007/05	2007/12/01
Thiofanox	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Thiometon	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Toxaphene (camphechlor)	Organochlorine; Persistence: > 100 days, high; Bioaccumulation high.	2002	2002
Triadimenol	Bioaccumulation: Kow A: logP = 3.08; B: logP = 3.28 (e-PM-2006-2007); Persistence: DT50 in sandy loam 110-375 days, in loam 240-; 270 days (e-PM-2006-2007); Soil Sorption Potential (Koc): ??	2007/05	2007/12/01
Triazophos	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Trifluralin	Toxicity: RfD 0.0075 mg/kg/day; Log Kow 5.07. LC50 0.02 mg/litre, (under review, to be clarified)	2002	2002
Vamidothion	WHO Highly hazardous (Class IB)	WHO (2007)	2002
Warfarin	WHO Table 2, Class Ib	2002	2002
Zeta-cypermethrin	Acute toxicity to mammals (WHO). Acute aquatic toxicity (PM); Chlorinated hydrocarbon (PM)	2005	2005
Zinc phosphide	Acute toxicity to mammals (PM); Reference dose (US EPA, Reregistration Eligibility Decision, 1998)	2005	2005

Detaillierte Informationen zur Pestizidverwendung im zertifizierten Wald finden Sie auf der Webseite von FSC International, allerdings nur in englischer Sprache (<http://www.fsc.org>)