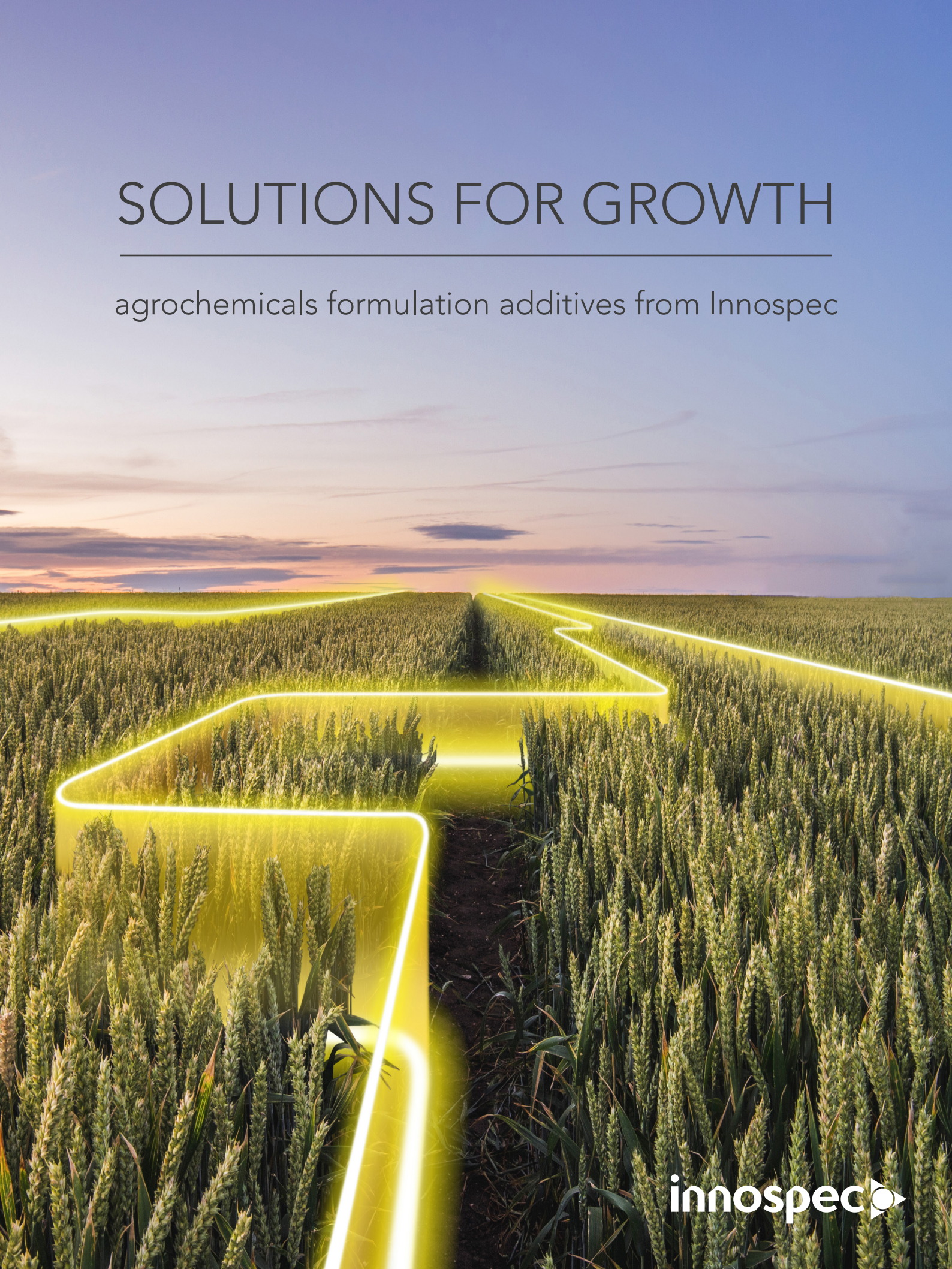


SOLUTIONS FOR GROWTH

agrochemicals formulation additives from Innospec



innospec 

Innospec is a global supplier of specialty chemicals to the agrochemical market.

Our adjuvants, emulsifiers, specialty solvents, wetting and chelating agents are used widely in agrochemical formulations. We develop the technology that optimizes formulations for crop protection, plant nutrition, soil improvers, tank mix adjuvants, wood preservatives, and animal health. These are time tested, high quality components that ensure active ingredients can be formulated in stable products that will spread on, stick to, wet, penetrate and protect in the most efficacious way.

Our established brand names include NANSA®, DEHSCOFIX®, EMPILAN®, EMPIPHOS®, EMPIGEN® and the ENVIOMET® range.

We are committed to continuously improve the sustainability of our products and help our customers respond to environmental challenges through innovation and improved product performance.

Fast, flexible, customer-focused

As you would expect from an organization that spans 23 countries with approximately 2000 employees, we have a wealth of knowledge and experience to draw on. Outside agrochemicals, we are also well known in the oilfield, fuel, refinery, metal extraction, industrial, construction, personal and home care sectors.

We constantly strive to develop new technologies that help customers achieving the most challenging goals. Our Agrochemicals application experts are committed to developing strong customer relationships built on trust and shared solutions to often complex technical problems. Our focus is on delivering innovative and reliable support while remaining flexible to changing market needs.

Our customers benefit from our quality assurance and customer service reliability, as well as the strength of our worldwide manufacturing and distribution capabilities. We understand the complexity of the regulatory environment and our dedicated team support customers while registrating their formulations globally. All Innospec Agrochemicals products are European REACH compliant and most of them are listed by the US EPA.

We are committed to continual innovation and the development of agrochemical products that contribute to a sustainable environment without compromising on performance. We deliver a fast, flexible, reliable and customer-focused service at all times.



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The selection table below illustrates how our range of adjuvants, emulsifiers, speciality solvents, wetting agents and chelating agents can be used and is a quick reference tool to find the best additive for your specific formulation.

	Emulsifiable Concentrate (EC)	Emulsion in Water (EW)	Micro-Emulsion (ME)	Oil Dispersion (OD)	Suspension Concentrate (SC)	Suspo-Emulsion (SE)	Wettable Powder (WP)	Water Dispersible Granule (DDG)	Soluble Liquid (SL)	Tank Mix Adjuvants (TMA)
ENVIOMET® WT - Adjuvants for liquid formulations										
NANSA® EVM - Alkylbenzene sulfonate calcium salts										
ENVIOMET® EM - Di-alkyl sulfosuccinates										
NANSA® - Alkylbenzene sulfonates										
EMPIPHOS® - Alkyl phosphate esters										
DEHSCOFIX® CO/ENVIOMET® EM - Castor oil ethoxylates										
ENVIOMET® EM - Tri-styryl phenol ethoxylates										
EMPILAN®/ENVIOMET® - Alcohol alkoxyates										
ENVIOMET® SOL - Specialty solvents										
ENVIOMET® WT/NANSA® - Wetting agents for solid formulations										
ENVIOMET® C - Biodegradable chelating agents										



ENVIOMET® WT

Our ENVIOMET® WT range is ideal for use in Soluble Liquid (SL) herbicide formulations. It was developed to ensure impact on the environment is kept to a minimum without compromising on product performance. Some of our ENVIOMET® WT blends are compatible with high electrolyte systems, making them excellent candidates for use as wetting agents in liquid fertilizers and tank mix adjuvants.

Product Name	Chemistry	Appearance at 25°C	Description and use	US EPA listing*
ENVIOMET® WT 8002*	Alkyl polyglucoside	Liquid	Biodegradable adjuvant and wetting agent compatible with high electrolytes.	40 CFR 180
ENVIOMET® WT 8170	Amphoteric alkyl amine	Liquid	Low impact and biodegradable adjuvant, particularly suited for use in IPA glyphosate SL formulations.	Non-food application
ENVIOMET® WT 8217	Alkyl diamine alkoxylate	Liquid	Low aquatic toxicity adjuvant and possible alternative for tallow amine ethoxylate in herbicide formulations.	40 CFR 180
ENVIOMET® WT 8516	Non-ionic surfactants blend	Liquid	Low aquatic toxicity adjuvant for IPA and ammonium glyphosate, liquid fertilizers and tank mix adjuvants.	40 CFR 180
ENVIOMET® WT 8519	Non-ionic and anionic surfactants blend	Liquid	Low aquatic toxicity adjuvant for herbicide formulations, liquid fertilizers and tank mix adjuvants.	Non-food application
ENVIOMET® WT 8646	Amphoteric and anionic surfactants blend	Liquid	Adjuvant for IPA glyphosate showing excellent wetting and spreading characteristics.	Not listed

NANSA® EVM - alkylbenzene sulfonate calcium salts

NANSA® EVM is a highly versatile and functional range of alkylbenzene sulfonate calcium salts. They can be used in a number of emulsified systems including Emusifiable Concentrate (EC), Emulsion in Water (EW), Micro-Emulsion (ME), Suspo-Emulsion (SE) and Oil Dispersion (OD) systems.

The products provide spontaneous emulsification (so-called ‘blooming’) for EC formulations, together with excellent long-term stability. To achieve the required Hydrophilic Lipophilic Balance (HLB), these emulsifiers are generally combined with non-ionic emulsifiers such as our DEHSOFIX® CO/ENVIOMET® EM castor oil ethoxylates, ENVIOMET® EM tri-styryl phenol ethoxylates and EMPILAN® alcohol alkoxyates.

Product Name	Chemistry	Solvent	Appearance at 25°C	Flash Point (°C)	Active content (%w/w)	US EPA listing*
NANSA® EVM 62/H	Branched dodecylbenzene sulfonate calcium salt	Iso-butanol	Viscous liquid	28	61	40 CFR 180
NANSA® EVM 40/2ND	Branched dodecylbenzene sulfonate calcium salt	Solvesso™ 200ND and non-ionic surfactant	Liquid	>90	40	Pending
NANSA® EVM 50/ND	Branched dodecylbenzene sulfonate calcium salt	Iso-butanol and Solvesso™ 200ND	Liquid	31	50	Pending
NANSA® EVM 40/2NDL	Linear dodecylbenzene sulfonate calcium salt	Solvesso™ 200ND and non-ionic surfactant	Liquid	>90	40	Pending
NANSA® EVM 50/NS	Linear dodecylbenzene sulfonate calcium salt	Solvesso™ 100 / propylene glycol	Viscous liquid	48	48	Pending
NANSA® EVM 63/B	Linear dodecylbenzene sulfonate calcium salt	Iso-butanol	Liquid	28	63	40 CFR 180
NANSA® EVM 70/B	Linear dodecylbenzene sulfonate calcium salt	Iso-butanol	Viscous liquid	28	69	40 CFR 180
NANSA® EVM 62/N	Linear dodecylbenzene sulfonate calcium salt	N-butanol	Liquid	36	61	40 CFR 180
NANSA® EVM 70/13	Linear dodecylbenzene sulfonate calcium salt	N-butanol	Viscous liquid	36	70	40 CFR 180
NANSA® EVM 70/2E	Linear dodecylbenzene sulfonate calcium salt	2-ethylhexanol / propylene glycol	Viscous liquid	80	57	40 CFR 180
NANSA® EVM 60/2EG	Linear dodecylbenzene sulfonate calcium salt	2-ethylhexanol	Viscous liquid	81	60	40 CFR 180

ENVIOMET® EM - di-alkyl sulfosuccinates

Our ENVIOMET® EM range of di-alkyl sulfosuccinates have very low dynamic surface tension. This ensures rapid interfacial migration. They are particularly well suited to formulations that require very quick wetting properties when diluted into water like Oil Dispersion (OD) and viscous Emulsifiable Concentrate (EC) formulations.

Product Name	Chemistry	Appearance at 25°C	Active content (%w/w)	US EPA listing*
ENVIOMET® EM 5662	Di-octyl sulfosuccinate sodium salt in methylated oil	Liquid	64	40 CFR 180
ENVIOMET® EM 5664	Di-octyl sulfosuccinate sodium salt in Solvesso™ 100	Liquid	62	40 CFR 180

NANSA® - alkylbenzene sulfonates

We supply a range of NANSA® anionic surfactants based on linear or branched alkylbenzene sulfonic acids or as an isopropylamine salt. The products provide flexibility to the formulator as primary emulsifiers for Emulsifiable Concentrate (EC) and Emulsion in Water (EW). They can also be specified as wetting agents in suspension concentrate (SC) formulations.

Product Name	Chemistry	Appearance at 25°C	Active content (%w/w)	US EPA listing*
NANSA® SSA/F	Linear dodecylbenzene sulfonic acid	Liquid	>95	40 CFR 180
NANSA® SBA	Branched dodecylbenzene sulfonic acid	Viscous liquid	>94	40 CFR 180
NANSA® YS 94	Linear dodecylbenzene sulfonate isopropylamine salt	Viscous liquid	>90	Not listed

EMPIPHOS® - alkyl phosphate esters

Our EMPIPHOS® alkyl phosphate esters are versatile anionic surfactants that can be used in liquid formulations such as Emulsifiable Concentrate (EC), Oil Dispersion (OD), Suspension Concentrate (SC) and Suspo-Emulsion (SE). Depending on the ratio between the mono and di-ester entities, these alkyl phosphate esters can deliver both wetting agent and emulsifier effects. Generally low foaming and stable over a wide pH range, the products in our EMPIPHOS® range exhibit good electrolyte tolerance and as an adjuvant can help with compatibility in tank mixes.

Product Name	Chemistry	Appearance at 25°C	Active content (%w/w)	US EPA listing*
EMPIPHOS® O3 D	Fatty alcohol, ethoxy phosphate, free acid	Viscous liquid	100	Not listed
EMPIPHOS® A5 D	Fatty alcohol, ethoxy phosphate, free acid	Liquid	100	Not listed
EMPIPHOS® DF 1313	Oxo alcohol phosphate, free acid	Liquid	100	Not listed
EMPIPHOS® DF 1326	Fatty alcohol alkoxy phosphate, free acid	Liquid	100	Not listed

DEHSCOFIX® CO and ENVIOMET® EM - castor oil ethoxylates

Our DEHSCOFIX® CO and ENVIOMET® EM castor oil ethoxylates are highly versatile and functional non-ionic emulsifiers. They can be used in a number of emulsified systems such as Emulsifiable Concentrate (EC), Emulsion in Water (EW), Suspo-Emulsion (SE) and Oil Dispersion (OD) systems.

Offering great flexibility, these emulsifiers can be used to achieve a broad range of Hydrophilic Lipophilic Balance (HLB). They are generally combined with anionic emulsifiers such as NANSAs® EVM calcium dodecylbenzene sulfonates and ENVIOMET® EM di-alkyl sulfosuccinates.

Product Name	Chemistry	Appearance at 25°C	Active content (%w/w)	HLB	US EPA listing*
DEHSCOFIX® CO 70	Castor oil, 12 EO	Liquid	100	7.3	40 CFR 180
DEHSCOFIX® CO 95	Castor oil, 18 EO	Liquid	100	9.5	40 CFR 180
ENVIOMET® EM 1020	Castor oil, 20 EO	Liquid	100	10.2	40 CFR 180
DEHSCOFIX® CO 105	Castor oil, 24 EO	Liquid	100	10.5	40 CFR 180
DEHSCOFIX® CO 115	Castor oil, 30 EO	Liquid	100	11.3	40 CFR 180
ENVIOMET® EM 1032	Castor oil, 32 EO	Liquid	100	12.0	40 CFR 180
ENVIOMET® EM 1036	Castor oil, 36 EO	Viscous liquid	100	12.6	40 CFR 180
ENVIOMET® EM 1040/B	Castor oil, 40 EO	Paste	100	13.0	40 CFR 180
ENVIOMET® EM 1054	Castor oil, 54 EO	Viscous paste	100	14.4	40 CFR 180

ENVIOMET® EM - tri-styryl phenol ethoxylates

Our ENVIOMET® EM tri-styryl phenol ethoxylates are high performing non-ionic emulsifiers that deliver spontaneous emulsification with excellent long-term stability. They are generally combined with anionic emulsifiers such as NANSAs® EVM calcium dodecylbenzene sulfonates and ENVIOMET® EM di-alkyl sulfosuccinates in Emulsifiable Concentrate (EC), Emulsion in Water (EW), Micro-Emulsion (ME) and Suspo-Emulsion (SE) emulsified systems. Higher degree ethoxylates can also be used in dispersed systems, particularly SC formulations.

Product Name	Chemistry	Appearance at 25°C	Active content (%w/w)	HLB	US EPA listing*
ENVIOMET® EM 2014	Tri-styryl phenol, 14 EO	Viscous liquid	100	12.0	40 CFR 180
ENVIOMET® EM 2016	Tri-styryl phenol, 16 EO	Viscous liquid	100	12.5	40 CFR 180
ENVIOMET® EM 2020	Tri-styryl phenol, 20 EO	Paste	100	13.5	40 CFR 180
ENVIOMET® EM 2040	Tri-styryl phenol, 40 EO	Waxy solid	100	16.0	40 CFR 180
ENVIOMET® EM 2054	Tri-styryl phenol, 54 EO	Waxy solid	100	17.0	40 CFR 180



EMPILAN® and ENVIOMET® WT - alcohol alkoxylates

Our EMPILAN® and ENVIOMET® WT alcohol alkoxylates are extremely versatile products. They will provide efficient wetting properties with some emulsification and even some dispersing effects depending on the length of carbon chains and ethoxylation degree.

When used as emulsifiers, they are generally combined with anionic emulsifiers such as NANSAs® EVM calcium dodecylbenzene sulfonates and ENVIOMET® EM di-alkyl sulfosuccinates. Given their broad application uses, these products can be incorporated into virtually any liquid formulation whether Emulsifiable Concentrate (EC), Emulsion in Water (EW), Micro-Emulsion (ME), Oil Dispersion (OD), Suspension Concentrate (SC) or Suspo-Emulsion (SE) emulsified systems.

Product Name	Chemistry	Appearance at 25°C	Active content (%w/w)	HLB	US EPA listing*
EMPILAN® KA 5	C10-C12 alcohol, 5 EO	Liquid	100	11.5	40 CFR 180
EMPILAN® KI 6	C13 alcohol, 6 EO	Liquid	100	11.4	40 CFR 180
EMPILAN® KI 8	C13 alcohol, 8 EO	Liquid	100	12.8	40 CFR 180
EMPILAN® KI 10	C13 alcohol, 10 EO	Liquid	100	13.7	40 CFR 180
EMPILAN® KR 6	C9-C11 alcohol, 6 EO	Liquid	100	12.5	40 CFR 180
EMPILAN® KR 8	C9-C11 alcohol, 8 EO	Liquid	100	13.8	40 CFR 180
EMPILAN® PF 7169	Fatty alcohol alkoxylate	Liquid	100	12.2	Pending
ENVIOMET® WT 6010	Blend of ethoxylated C13 alcohol	Liquid	100	13.6	40 CFR 180

ENVIOMET® SOL

Our new generation of water immiscible and high flash point solvents that can be used in Emulsifiable Concentrate (EC), Emulsion in Water (EW) and Supo-Emulsion (SE) formulations. ENVIOMET® SOL specialty solvents exhibit a low toxicity profile and have minimal impact on the environment.

Product Name	Chemistry	Appearance at 25°C	Purity (%w/w)	US EPA listing*
ENVIOMET® SOL BA	Benzyl acetate	Liquid	>99	40 CFR 180
ENVIOMET® SOL DBC	Di-n-butyl carbonate	Liquid	>98	Not listed
ENVIOMET® SOL EHL	Ethyl-hexyl lactate	Liquid	>96	Pending

ENVIOMET® C

Our ENVIOMET® C biodegradable chelating agents can be incorporated in Wettable Powder (WP) and Water dispersible Granule (WG) formulations for hard water compatibility or as conditioning agents in tank mixes. They can also be used as chelating agents for micro-nutrient and are listed in Annex 1 of EU Regulation 2003/2003, section E.3. These products are readily biodegradable and they are also not classified, making them an environmentally friendly alternative to other chemistries.

Product Name	Chemistry	Appearance at 25°C	Active content (%w/w)	US EPA listing*
ENVIOMET® C 140	[S,S] Ethylenediamine di-succinic tri-sodium salt	Liquid	37	40 CFR 180
ENVIOMET® C 265	[S,S] Ethylenediamine di-succinic acid	Powder	66	40 CFR 180

Wetting agents for solid formulations

Wood treatment

ENVIOMET® WT and NANSA®

Our ENVIOMET® WT and NANSA® wetting agents provide an easy-to-handle and effective wetting agent for both Wettable Powder (WP) and Water dispersible Granule (WG) solid formulations.

Product Name	Chemistry	Appearance at 25°C	Active content (%w/w)	US EPA listing*
ENVIOMET® WT 4510	Sodium lauryl sulfate	Powder	>92	40 CFR 180
ENVIOMET® WT 4950	Alpha olefin sulfonate sodium salt	Powder	>92	40 CFR 180
ENVIOMET® WT 7175	Sodium methyl cocoyl taurate	Powder	>70	Not listed
NANSA® HS 90/S	Linear dodecylbenzene sulfonate sodium salt	Powder	90	40 CFR 180

EMPIGEN® BAC

Our EMPIGEN® BAC is an aqueous solution of benzalkonium chloride (BAC) a cationic surfactant used as wood preservative. The BAC has been notified for the product types PT 1, 2, 3, 4, 8, 10, 11 and 12 according to the European Biocidal Products Regulation (528/2012/EC) and subsequent amendments.

Product Name	Chemistry	Appearance at 25°C	Active content (%w/w)
EMPIGEN® BAC 50	Benzalkonium chloride	Liquid	50
EMPIGEN® BAC 80	Benzalkonium chloride	Liquid	80

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* See the EPA Trade Names of Inert Ingredients Database for applicable exemptions of tolerance and limitations.

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