EMULSION POLYMERS

Emulsifiers and Additives

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Discover our ingredients

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Welcome to Emulsion Polymerization from Innospec

Emulsion Polymerization solutions from Innospec: whether acrylics and vinylics, rubber and latex, PVC and ABS, used for paints, adhesives, coatings and construction you have the right choice!

MONOMER EMULSION

- Droplet size and distribution
- Emulsion stability
- Viscosity
- Foaming

POLYMERIZATION

- Particle nucleation
- Stability of the growing particle (steric interactions & electrostatic stabilization)
- Monomer transport
- Foaming

POST POLYMERIZATION

- Particle stabilization
- Surfactant migration
- Resin stability
- Chemical and mechanical stability

Our ingredients are:

- SULFATES
- ETHER SULFATES
- SULFONATES
- SULFOSUCCINATES
- PHOSPHATE ESTERS
- SPECIALTY PRODUCTS
- INNOVATIVE TECNHOLOGIES

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Sulfates

Sulfates are historically the most used emulsifiers. They are characterized by a good particle size control and by an excellent regulatory compliance. They may require additional surfactants for extended stabilization.

Product name	Chemical Name	Charge	Physical state	Activity %	CMC %	Surface tension dynes/cm	Flash Point (°C)	Solubility in Water	Biodegra-dability (28 days)	% Naturally Derived
EMPICOL® AL-25/EX	Ammonium Lauryl Sulfate	Anionic	Liquid	25	0.06	33	> 93.3	Easily Soluble	Readily	100
EMPICOL® AL-70				70	0.06	33	> 110			100
EMPIMIN® PCA-845	Sodium Dodecyl Sulfate		Powder	92	0.06	29	> 100			100
EMPIMIN® PCA-821			Liquid	15	0.06	29	> 100			100
EMPIMIN® PCA-822				30	0.06	29	> 100			100
EMPIMIN® PCA-826	Sodium Lauryl Sulfate			29	0.06	29	> 100			100
EMPICOL® LX-28/D				30	0.06	29	> 100			100
EMPIMIN® PCA-832			Needles	92	0.06	29	275 (Auto Ignition)			100

Ether Sulfates

Ether Sulfates show results in efficient emulsification and coagulum-free latex. They are all APE-free products, have an excellent control of particle size and can obtain small particle size latex. They are available as different salts.

Product name	Chemical Name	Charge	Physical state	Activity %	Surface tension (at 0.) dynes/cm	Flash Point °C	Solubility in Water	Biodegra-dability (28 days)	% Naturally Derived
EMPIMIN® PCA-039	Sodium Laureth Sulfate	Anionic	Liquid	27	32	> 93.3	Easily Soluble	Readily	75
EMPIMIN® PCA-065				28	38	> 93.3			67
EMPIMIN® PCA-078				31	39	> 93.3			61
EMPIMIN® PCA-130				26	42	> 93.3			47
EMPIMIN® PCA-169				30	46	> 100			39
EMPIMIN® PCA-365	Ammonium Laureth Sulfate			70	37.5	> 93.3			68

Sulfonates

Sulfonates are workhorse emulsifiers in polymerization and highly suitable for use with hydrophobic monomers. They have excellent thermal and hydrolytic stability (even at extreme pH conditions) and can be used as the sole emulsifier in conjunction with nonionic surfactants.

Product name	Chemical Name	Charge	Physical state	Activity %	CMC %	Surface tension dynes/cm	Flash Point °C	Solubility In Water	Biodegra -dability (28 days)	% Naturally Derived
NANSA® LSS-38 AS	Sodium Alpha Olefin Sulfonate	Anionic	Liquid	38	0.07	29	N/A	Very Soluble	Readily	Non-Vegetable
NANSA® LSS-495/V			Needles	95	0.07	29		Easily Soluble		
NANSA® SB-23	Sodium Dodecylbenzene Sulfonate (Branched)		Liquid	23	0.1	32				
NANSA® SS-25/A	Sodium Dodecylbenzene Sulfonate (Linear)			25	0.1	32		Very Soluble		
NANSA® SS-30/S				30	0.1	32	> 93.3			
NANSA® SS-50			Paste	55	0.1	32	> 93.3			
NANSA® HS-90/S			Needles	90	0.1	32	> 93.4			
NANSA® SS-55I			Soft paste	54.0 – 56.0	0.1	32	> 93.4			
NANSA® YS-94	Isopropylamine Salt of Dodecylbenzene Sulfonate (Linear)		Viscous Liquid	90	0.1	32	246	Easily Soluble		

Sulfosuccinates

Sulfosuccinates are used as primary or secondary emulsifiers for both emulsion and suspension polymerization. They are exceptional wetting agents and excellent emulsifiers for polymerization. See below the newest grades available.

To access the broader Sulfosuccinates Portfolio, please scan the QR Code.

Product name	Chemical Name	Charge	Physical state	Activity %	CMC %	Surface tension dynes/cm	Flash Point °C	Solubility in Water	Biodegra -dability 28 days	% Naturally Derived
EMPIMIN® MA-80I* & EMPIMIN® MA-80IP**	Sodium Dihexyl Sulfosuccinate	Anionic	Liquid	80	1.5	28	38	Easily Soluble	Readily	Non-Vegetable
EMPIMIN® MD-318*	Disodium Alkyl MIPA Sulfosuccinate			40	0.15	28	> 93.3			72
EMPIMIN® OT-75 EB* & EMPIMIN® OT-75	Sodium Dioctyl Sulfosuccinate with Ethanol			75	0.06	28	> 30			Non – Vegetable
EMPIMIN® OP-70	Sodium Dioctyl Sulfosuccinate with Propylene Glycol			76	0.06	28	31			
EMPIMIN® OT-75 PG				75	0.6	28	> 100			
EMPIMIN® PCA-507A* & EMPIMIN® PCA-507**	Disodium Alkylethoxy Sulfosuccinate			33	0.1	29	> 100			34
EMPIMIN® PCA-520	Disodium Laureth-3 Sulfosuccinate			32	0.1	29	> 200			56

*US products range
** EMEA & APAC products range

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Phosphate Esters

Phosphate Esters are excellent emulsifiers for polymerization. They have low water sensitivity and excellent electrolyte tolerance and promote corrosion inhibition. They can be used as the sole emulsifier in conjunction with nonionic surfactants.

Product name	Chemical Name	Charge	Physical state	Activity %	CMC %	Surface tension dynes/cm	Flash Point °C	Solubility in Water	Biodegra-dability 28 days	% Naturally Derived
EMPIPHOS® A5D	Phosphate Ester Acid of Ethoxylated Linear Alcohol	Anionic	Liquid	100	N/A	N/A	> 100	Easily Soluble	Readily	< 10
EMPIPHOS® DF-1313	Phosphate Ester Acid of 2-Ethylhexanol			100			> 100	Soluble		Non-Vegetable
EMPIPHOS® DF-1326	Phosphate Ester Acid of Ethoxylated Linear Alcohol			100			> 100	Readily	Readily	68
EMPIPHOS® I6/P	Phosphate Ester of Ethoxylated Branch Alcohol, Potassium Salt			25	0.06	36	> 100		Inherently	Non-Vegetable
EMPIPHOS® O3D	Phosphate Ester Acid of Ethoxylated Linear Alcohol			100	N/A	N/A	> 150		Readily	56
DEHSCOFIX® 770	Phosphate Ester Acid of Ethoxylated Slightly Branched Alcohol			100			76		Readily	Non-Vegetable

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Specialty Products

Specialty Products are additives that are intended to promote specific added performance. These products are typically added after polymerization or during formulation to promote differentiation of the resin in the final application.

Product name	Functionality	Charge	Physical state	Activity %	Flash Point °C	Solubility in Water	Biodegra-dability 28 days	% Naturally Derived
ACTIVEMOL™ DOM	Monomer	-	Liquid	> 99	160	Very Slightly	Readily	Non-Vegetable
DEHSCOFIX® RR-140	Chelant	Anionic		27 - 33	> 100	Very Soluble		
DEHSCOFIX® DIS 95	Dispersant			99	> 190	Not Soluble		100
DEHSCOFIX® DIS 54		Nonionic	Solid	> 99	> 93	Soluble	Not Readily	Non-Vegetable
DEHSCOFIX® DIS 16	Additive/ Dispersant		Liquid		135	Slightly		
DEHSCOFIX® PB-23	Solvent	-		> 99	189	Not Soluble	Readily	
DEHSCOFIX® WL-660	Additive/ Defoamer	Nonionic		> 99	246	Easily Soluble	NE	
DEHSCOFIX® WT-107	Dispersant	Anionic		29 - 31	> 100		NE	

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Innovative 1,4-dioxane and APE free technologies

Innovative 1,4-dioxane and APE free technologies* are mostly derived from natural raw materials, easily soluble in water and are excellent emulsifiers. In addition, they are readily biodegradable and 1,4 Dioxane-free products.

Please contact our technical team to explore these new solutions!

Product name	Chemical Name	Charge	Physical State	Activity %	CMC %	Surface tension dynes/cm	Flash Point °C	% Naturally Derived
EMPIMIN® NAT-110	Amine Oxide	Nonionic	Liquid	29 - 31	0.01	27	> 100	86
EMPIMIN® NAT-120	Alkyleth Carboxylate, Acid	Anionic		87 min.	NE	NE	> 100	40
EMPIMIN® NAT-130	Alkyleth Carboxylate Sodium Salt			22 min	NE	NE	> 100	54
EMPIMIN® NAT-210	Sodium Methyl Acyl Isethionate			32 min.	0.03	26	> 93.3	80
EMPIMIN® NAT-310	Sodium Methyl Acyl Taurate			29-33	0.1	31	> 93.3	85
EMPIMIN® NAT-320			Paste	30.0 - 31.5				
EMPIMIN® NAT-330			Solid Flakes	88 min.				
EMPIMIN® NAT-340			Liquid	29 - 33	0.1	31	> 93.3	86
EMPIMIN® NAT-410	Sodium Acyl Amino Acid			29 - 31	0.03	32	> 100	100
EMPIMIN® NAT-420				29 - 31	0.02	30	> 93.3	100
EMPIMIN® NAT-430				29 - 35	0.0.2	27	> 93.3	100
EMPIMIN® NAT-440	Proprietary Blend			50 - 59	NE	NE	> 200	100
EMPIMIN® NAT-450	Alkyl Glucoside	Nonionic		50 - 52	1.0	26	> 100	100
EMPIMIN® NAT-460				50 - 52	0.04	42	> 100	100
EMPIMIN® NAT-470				50 - 52	0.03	33	> 100	100

***Please inquire for global chemical inventory listing to these products.**

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Sustainability at Innospec

RSPO-1106327

As a member of the **Roundtable on Sustainable Palm Oil (RSPO)** since 2013, we have a long-term commitment to the responsible sourcing of palm-based raw materials. Our **Sustainable Sourcing of Palm Oil and Palm Kernel Oil Derivatives Policy** defines our commitments and the specific steps we are taking towards ensuring that our products are produced only from sustainable palm sources that comply with the **NDPE (no Deforestation, no Peat, no Exploitation)** principles. All our facilities that handle palm-based materials are RSPO mass balance (MB) supply chain certified. We are therefore able to supply our customers with RSPO MB certified products on request. We continue to support and encourage the sale of RSPO certified products to our customers.

We have been members of **Action for Sustainable Derivatives (ASD)** since 2020. The collaborative initiative aims to use a harmonized approach to supply chain transparency, risk monitoring and engagement efforts to improve practices. It is facilitated by **Business for Social Responsibility (BSR) and Transitions**, two organizations with expertise in the field of supply chain sustainability. With 31 member companies, the industry led group brings together like-minded companies to collectively tackle supply chain issues around palm oil and palm kernel oil derivatives and uphold the NDPE principles, respect human rights and support local livelihoods.

ASD
ACTION FOR SUSTAINABLE DERIVATIVES

GOLD | Top 5%
ecovadis
Sustainability Rating
MAY 2024

We have been awarded the **EcoVadis Gold Medal** for our sustainability management system and performance. Achieving Gold puts Innospec in the top 7% of all companies rated in our sector globally. EcoVadis is a **Corporate Social Responsibility (CSR)** platform for business sustainability assessment. It independently evaluates and benchmarks the sustainability performance of over 100,000 companies in 175 different countries and 200 industries, for their environmental, labor, fair business practices and sustainable procurement.

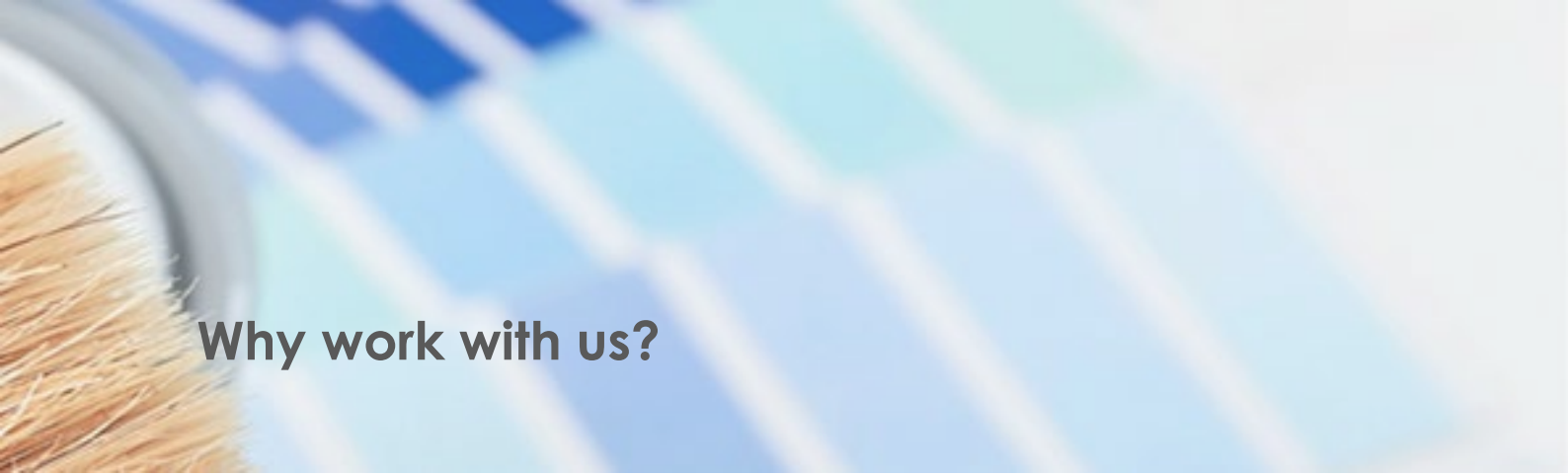
Discover our technical capabilities

Innospec Performance Chemicals offers a wide and diverse range of emulsifiers, stabilizers and additives for emulsion polymerization and waterborne coating formulations. We offer both products derived from synthetic ingredients as well as those that are naturally sourced. Our established brand names include **EMPIMIN®**, **NANSA®**, **EMPIPHOS®**, **DEHSCOFIX®** and **EMPILAN®** ranges.

Although our products are present in smaller amounts in the final formulations, it is our products that provide the specific performance end users demand from end applications. Our understanding of the structure-performance relationship of our products in your formulations enables us to support your requirements. Our products can be used in a wide range of applications for **waterborne formulas**, including **resin synthesis**, **paint formulation** and **colorant dispersions** in end uses such as paints, inks, and adhesives.

In coatings, going to a more environmentally friendly solution implies the move from solvent borne to waterborne formulations. We offer products that are both **alkyl phenol ethoxylate** as well as **dioxane-free**, to enable emulsion as well as coating scientists achieve regulatory and sustainability mandates while not sacrificing performance such as adhesion, corrosion inhibition, emulsion, and dispersion stability as well as appearance.

In addition, we are committed to continuous innovation and development of new products that contribute to a more sustainable environment yet not compromising performance, helping our customer respond to an ever-changing environmental challenge.



Why work with us?

Our portfolio covers a wide range of high-quality coating additives as well as quick fixes to meet the demanding needs of the coating industry, leveraging our chemistries and applications knowledge to develop solutions. A company that spans 25 countries and over 2100 employees, we have a wealth of knowledge and experience to draw on.

Finally, our customers benefit from our quality assurance and customer service reliability as well as our global manufacturing and distribution footprint.

Our **MISSION** is to exceed our customers' expectations while improving the lives of people who use their products, combining innovative ingredient technologies with formulation expertise to deliver the right blend of science and creativity in a sustainable way.

We look forward to working with you

painting your business with innovative solutions!

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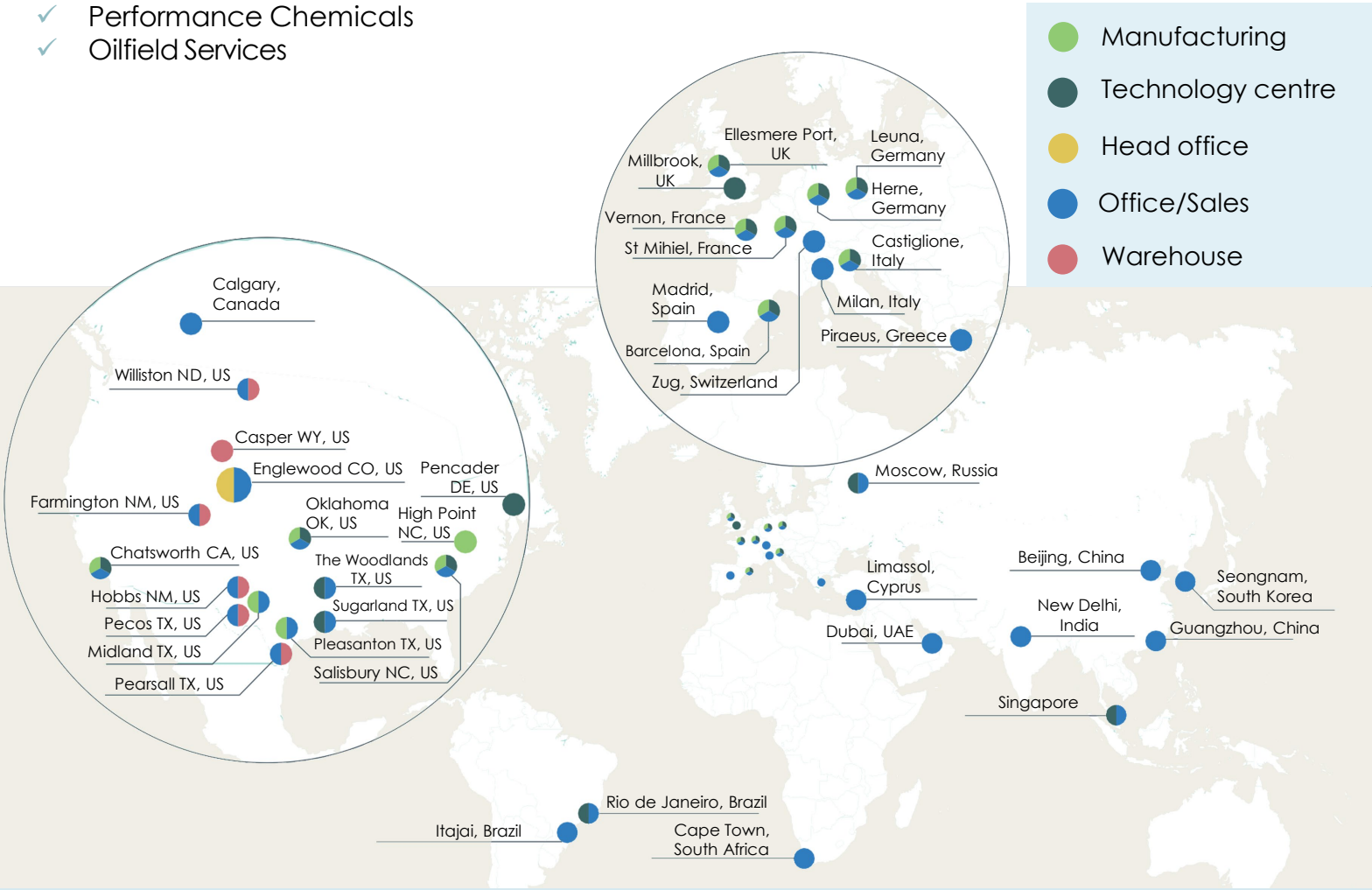
A global manufacturer of specialty chemicals

Innospec is a global manufacturer of specialty chemicals that focuses on bringing new, innovative technologies to our chosen markets and customers. We manufacture and supply a wide range of products through our business units:

- ✓ Fuel Specialties
- ✓ Performance Chemicals
- ✓ Oilfield Services



Global footprint

Innospec is located in 25 countries across the Americas, Europe, the Middle East, Africa and Asia Pacific. Customers benefit from the strength of our worldwide manufacturing capabilities, our global distribution facilities and our world-class technology centers equipped with state-of-the-art equipment. In total, we employ approximately 2,100 people. From our scientists and sales teams to our manufacturing engineers and technicians, supply chain managers, finance, legal, SHE and administration professionals, we benefit from having an experienced, dedicated and diverse workforce.

Employees

Innospec have **2,100** employees in **25 countries** with extensive investments in Research & Technology (R&T) to support customer needs.

Global R&T Network and technical support.

Investment and growth

2% of sales invested back in R&T

Revenue US$1.9 billion (December 2022)

Core business units
Performance Chemicals, Fuel Specialties and Oildfield Services.

R&T Excellence

R&T Technology Center of Excellence with new laboratory facilities in the UK and US.

To focus on our developments for **Emulsion Polymers** and **Waterborne Coating solutions** and meet customer needs, we built a new state of the art R&T laboratory in Salisbury.

Surface science at the water/oil interface.
Technology exchange across core businesses.

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Connect with us!

construction@innospecinc.com

www.innospec.com

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