

# Natural Bioremediation Products

Global Advantech's innovative products increase the rate of bioremediation of soil, concrete and water, reducing the processing time. The products contain natural biostimulant molecules and nutrients, which accelerate the metabolic activity of indigenous micro-organisms and so improve the rates of breakdown of hydrocarbons, oils and greases, and other organic molecules

## NATURAL BIOREMEDIATION AGENTS FOR SOIL, CONCRETE AND WATER

Code	Product	Pollutants	Applications - land	Applications - water
BR900	<b>NATURAL BIOSTIMULANT</b>	Aliphatic + aromatic hydrocarbons, organic solvents	<ul style="list-style-type: none"> <li>• Sensitive environments</li> <li>• Biostimulant</li> <li>• Non-foaming</li> <li>• <i>In situ</i>: injection, spray</li> <li>• <i>Ex situ</i>: spray</li> </ul>	<ul style="list-style-type: none"> <li>• Sensitive environments</li> <li>• Biostimulant</li> <li>• Non-foaming</li> <li>• <i>In situ</i>: injection, spray</li> <li>• <i>Ex situ</i>: spray</li> </ul>
BR912	<b>NATURAL BIOREMEDIATION AGENT</b>	Mineral oils + greases, vegetable oils + greases, aliphatic + aromatic hydrocarbons, polyaromatic hydrocarbons, organic solvents	<ul style="list-style-type: none"> <li>• Soil</li> <li>• Construction materials</li> <li>• Industrial premises</li> <li>• Power generations plants</li> <li>• Former gas works</li> <li>• Oil/gas well-sites</li> <li>• Transport facilities: including car parks, railway track, airports, fuel depots, ports</li> <li>• Biostimulant</li> <li>• Non-foaming</li> <li>• <i>In situ</i>: injection, spray</li> <li>• <i>Ex situ</i>: spray, soil washing plant</li> </ul>	<ul style="list-style-type: none"> <li>• Hydrocarbon films on surface water</li> <li>• Biostimulant</li> <li>• Non-foaming</li> <li>• <i>In situ</i>: spray</li> </ul>
BR914	<b>NATURAL BIOREMEDIATION AGENT + NUTRIENTS</b>	Mineral oils + greases, animal fats + greases, vegetable oils + greases, aliphatic + aromatic hydrocarbons, polyaromatic hydrocarbons, phenols, organic solvents	<ul style="list-style-type: none"> <li>• Low organic content: soil, sand, gravel, construction materials</li> <li>• Industrial premises</li> <li>• Power generations plants</li> <li>• Former gas works</li> <li>• Oil/gas well-sites</li> <li>• Transport facilities: including car parks, railway track, airports, fuel depots, ports</li> <li>• Biostimulant</li> <li>• Includes nutrients to compensate for localised deficiencies</li> <li>• <i>In situ</i>: injection, spray</li> <li>• <i>Ex situ</i>: spray, soil washing plant</li> </ul>	<ul style="list-style-type: none"> <li>• Not used</li> </ul>
BR915	<b>NATURAL BIOREMEDIATION AGENT + ELECTRON DONOR</b>	Chlorinated + other halogenated hydrocarbons	<ul style="list-style-type: none"> <li>• Soil</li> <li>• Construction materials</li> <li>• Industrial premises</li> <li>• Biostimulant</li> <li>• Non-foaming</li> <li>• <i>In situ</i>: injection, spray</li> <li>• <i>Ex situ</i>: spray, soil washing plant</li> </ul>	<ul style="list-style-type: none"> <li>• Chlorinated/halogenated hydrocarbons in sediments</li> <li>• Biostimulant</li> <li>• Non-foaming</li> <li>• <i>In situ</i>: spray</li> </ul>

### Global Advantech Limited

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# Natural Bioremediation Products



## NATURAL BIOREMEDIATION AGENTS FOR SOIL, CONCRETE AND WATER Cont/...

Code	Product	Pollutants	Applications - land	Applications - water
BR920	NATURAL BIOREMEDIATION AGENT + NUTRIENTS + ELECTRON DONOR	Mixed hydrocarbons, chlorinated + other halogenated hydrocarbons	<ul style="list-style-type: none"> <li>• Soil</li> <li>• Construction materials</li> <li>• Industrial premises</li> <li>• Biostimulant</li> <li>• <i>In situ</i>: injection, spray</li> <li>• <i>Ex situ</i>: spray, soil washing</li> </ul>	<ul style="list-style-type: none"> <li>• Not used</li> </ul>
BR925	NATURAL BIOREMEDIATION AGENT FOR SENSITIVE ENVIRONMENTS	Vegetable oils + greases, animal fats +greases aliphatic + aromatic hydrocarbons, polyaromatic hydrocarbons, phenols, organic solvents	<ul style="list-style-type: none"> <li>• Sensitive environments – low organic content soil, sand, gravel</li> <li>• Biostimulant</li> <li>• Includes nutrients to compensate for localised deficiencies</li> <li>• Non-foaming</li> <li>• <i>In situ</i>: injection, spray</li> <li>• <i>Ex situ</i>: spray, soil washing</li> </ul>	<ul style="list-style-type: none"> <li>• Surface waters</li> <li>• Water storage</li> <li>• Sensitive environments</li> <li>• Biostimulant</li> <li>• Includes nutrients to compensate for localised deficiencies</li> <li>• Non-foaming</li> <li>• <i>In situ</i>: injection</li> <li>• <i>Ex situ</i>: spray</li> </ul>

## BIOREMEDIATION NUTRIENTS

Code	Product	Pollutants	Applications - land	Applications - water
BR930	BIOREMEDIATION NUTRIENT	Vegetable oils + greases, animal fats +greases aliphatic + aromatic hydrocarbons, polyaromatic hydrocarbons, phenols, organic solvents	<ul style="list-style-type: none"> <li>• Low organic content: soil, sand, gravel, construction materials</li> <li>• Industrial premises</li> <li>• Power generations plants</li> <li>• Former gas works</li> <li>• Oil/gas well-sites</li> <li>• Transport facilities: including car parks, railway track, airports, fuel depots, ports</li> <li>• Non-foaming</li> <li>• <i>In situ</i>: injection, spray</li> <li>• <i>Ex situ</i>: spray</li> </ul>	<ul style="list-style-type: none"> <li>• Aquifers</li> <li>• Water storage</li> <li>• <i>In situ</i>: injection</li> </ul>
BR931	BIOREMEDIATION NUTRIENT FOR CONCRETE	Vegetable oils + greases, animal fats +greases aliphatic + aromatic hydrocarbons, polyaromatic hydrocarbons, organic solvents	<ul style="list-style-type: none"> <li>• Concrete</li> <li>• Limestone</li> <li>• Non-foaming</li> <li>• <i>In situ</i>: spray</li> <li>• <i>Ex situ</i>: spray</li> </ul>	<ul style="list-style-type: none"> <li>• Not used</li> </ul>

# Natural Bioremediation Products



## CLEANERS + DEGREASERS FOR USE BEFORE AND DURING BIOREMEDIATION

Code	Product	Pollutants	Applications - land
BR970	<b>ULTRA-GREEN PRE-BIOREMEDIATION DEGREASER</b>	Mineral oils + greases, fuel oils, BTEX + additives, aliphatic + aromatic hydrocarbons	<ul style="list-style-type: none"> <li>• Construction materials</li> <li>• Industrial premises</li> <li>• Power generation plants</li> <li>• Oil/gas well-sites</li> <li>• Transport facilities: including car parks, railway track, airports, fuel depots, ports</li> <li>• Non-toxic to established indigenous microorganisms</li> <li>• <i>In situ</i> : cleaning machine, high/low pressure spray</li> <li>• <i>Ex situ</i>: high/low pressure spray</li> </ul>
BR971	<b>ULTRA-GREEN BIOREMEDIATION COMPATIBLE CLEANER</b>	Mineral oils + greases, fuel oils, aliphatic + aromatic hydrocarbons	<ul style="list-style-type: none"> <li>• Industrial premises</li> <li>• Power generation plants</li> <li>• Car parks</li> <li>• Non-toxic to established indigenous microorganisms</li> <li>• <i>In situ</i> : cleaning machine, high/low pressure spray</li> </ul>

## NATURAL BIOSTIMULANT AND BIOREMEDIATION PRODUCT SELECTOR

			POLLUTANT										SUBSTRATE											
			Mineral oils	Synthetic oils	Mineral greases	Synthetic greases	Animal fats	Vegetable oils	Vegetable based greases	Hydrocarbons, PAHs	Halogenated hydrocarbons, PCBs	Organic solvents	Glycol-based antifreezes and air conditioning fluids	Water - lakes, ponds, rivers	River banks, foreshore	Environmentally sensitive locations	Hard rock formations	Soft rock formations	Soil - high organic content	Soil - low organic content, sand	Concrete, blockwork, brickwork	Gravel, rail track ballast	Asphalt	Wood
BIOREMEDIATION AGENTS	BR900	NATURAL BIOSTIMULANT	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓				✓							
	BR912	NATURAL BIOREMEDIATION AGENT	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓				✓			✓	✓	✓	✓	✓
	BR914	NATURAL BIOREMEDIATION AGENT + NUTRIENTS	✓	✓	✓	✓		✓	✓	✓		✓	✓				✓	✓	✓	✓	✓	✓	✓	✓
	BR915	NATURAL BIOREMEDIATION AGENT + ELECTRON DONOR	✓	✓	✓	✓	✓	✓	✓	✓		✓					✓	✓	✓	✓	✓	✓	✓	✓
	BR920	NATURAL BIOREMEDIATION AGENT + NUTRIENTS+ ELECTRON DONOR										✓					✓	✓	✓	✓	✓	✓		✓
	BR925	NATURAL BIOREMEDIATION AGENT FOR SENSITIVE ENVIRONMENTS	✓	✓	✓	✓		✓	✓	✓		✓	✓				✓	✓			✓			
BIOREMEDIATION NUTRIENTS	BR930	NATURAL BIOREMEDIATION NUTRIENT	✓	✓	✓	✓	✓	✓	✓		✓	✓					✓	✓	✓					
	BR931	NATURAL BIOREMEDIATION NUTRIENT FOR CONCRETE	✓	✓	✓	✓	✓	✓	✓		✓	✓					✓	✓	✓					
CLEANERS AND DEGREASERS	BR970	ULTRA-GREEN PRE-BIOREMEDIATION DEGREASER	✓	✓	✓	✓	✓	✓	✓	✓					✓	✓			✓			✓	✓	
	BR971	ULTRA-GREEN BIOREMEDIATION COMPATIBLE CLEANER	✓	✓	✓	✓	✓	✓	✓	✓					✓	✓			✓			✓	✓	