



# Triple7 BioConcentrate

Product Application Sheet



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# Product Application Sheet- Triple7 BioConcentrate

Designed for Ease of Use and Improved Efficiencies

## Triple7 BioConcentrate Use in Oil Spill Cleanup

Listed in the National Plan Oil Spill Control Agent (OSCA) Register

Triple7 BioConcentrate is a powerful, bio-based oil/water separator which has been listed for use as a both a Surface Cleaning Agent (SCA) and as an Oil Herding Agent (OHA) on the AMSA National Plan website at [www.amsa.gov.au/environment/maritime-environmental-emergencies/national-plan/General-Information/control-agents/list/index.asp](http://www.amsa.gov.au/environment/maritime-environmental-emergencies/national-plan/General-Information/control-agents/list/index.asp)

A Surface Cleaning Agent (SCA) is a product which, when applied to oil on shorelines or other firm surfaces facilitates the removal of the oil by natural processes or cleanup activities.

A Herding Agent (OHA) is a product added to surface oil to contain spreading for removal by oil collection processes. In an open ocean environment, the product herds oils in an outward direction hastening biodegradation though natural causes.

Triple7 BioConcentrate offers a powerful, safe and effective oil separation action without the potential for serious detrimental effects of clean-up operations to fragile marine eco-systems.

- Powerful oil separation action
- Non-toxic and non-hazardous
- Will not harm marine animals and plant life
- Safe and easy to use
- Concentrated and effective on all oils
- Non-corrosive and safe on all man-made and natural surfaces
- Readily Biodegradable
- Cost effective

## How the Product Works

Triple7 BioConcentrate is a non-ionic surfactant solution that reduces oil mats to their mono-layer molecule or particle by separating the oil droplets from one another without combining with the oil body or forming a standing emulsion. Very short-lived micro-emulsions are formed and as the hydroxyl or water phase attachment occurs, the extremely weak oil phase serves only to create a water interface (particle separation) in water borne systems.

Molecules of oil, fats, greases, lipids and proteins are separated from each other and forced to the edge of a slick, the same of which becomes wider if not contained with booms and oil collection systems.



## Method of Application

The product is diluted in a container or bulk applied (it auto dispenses in a water column simultaneously in all directions as it attempts to attach to water (hydroxyl) molecules. It is used at a concentration of between 1% and 10% as a pre-diluted solution.)

Oil is typically scavenged with oil collection systems rather than burned, in order to avoid atmospheric contamination such as asphalt, carbon soot and air borne solvents. The product is not flammable though it is comprised of free fatty acids, fatty alcohols, esters and similar materials. Triple7 BioConcentrate will not affect burn efficiency per se except that the use of Triple7 BioConcentrate causes hydrocarbon molecules to separate from one another thereby reducing available burn material density which will eventually reduce flame potential.

The product may be applied as a broad-spectrum spray, metered into the oil body or boom, or applied by saturating hydrophobic booms with the BioConcentrate solution. Typically, the application rate is 1% to 10% as a pre-diluted solution. It can be prepared using any type of water or salinity level.

The oil is captured with the use of lipophilic booms (high- or low-density polyethylene), oil/ water phase separation systems (fabric, flood, filtration or centrifugal) or other oil collection systems.

In an open ocean environment, the product herds oils in an outward direction hastening biodegrading through natural causes without necessarily requiring collection processes.

## Product Suitability

Triple7 BioConcentrate can be used effectively with a wide range of oils including mineral oils, crudes, residual fuels, diesel, kerosene, white spirits and lubricants.

All oils may be herded similarly with Triple7 BioConcentrate which functionally only attaches to hydroxyl ions in water, disassociating oils from the water phase and does not form a permanent bond with any known oil. This is what causes the separation action, allowing oil spills to disperse to the outer edges of the spill for removal. The product does not form a permanent bond with any known oil.

## Other Applications

Triple7 BioConcentrate is an ideal cleaner and degreaser for oil spills on all types of natural and man-made surfaces including: decks, ship's side, piers, wharfs, and response vehicles. It is non-corrosive and does not react with the cleaning surface. The product can also be used for tank cleaning and as an effective oil vapour dispersant.

It may also be used for washing rocks and shorelines.

## Restrictions of Use

There are no known application restrictions in a water environment and no known legal restrictions limiting the use of Triple7 BioConcentrate.

Triple7 BioConcentrate is listed on the AMSA National Oil Spill Control Agent (OSCA) Register, therefore its use is widely accepted as a gold standard in ocean spills and elsewhere that water including waste water occurs. It is currently used for isolating MTBE from ground water; for separating oil and water emulsions where they occur, and water borne cleaning applications aboard ocean vessels and in coastal clean-up applications world-wide.



## Handling and Storage

Triple7 BioConcentrate does not contain chemicals determined by the EPA (Environmental Protection Authority) or WHS (Work Health & Safety) to be carcinogenic or a suspected carcinogen. It is free of hazardous air pollutants, toxic chemicals, VOC's and ozone depleting substances which means it can be safely used in confined areas.

Triple7 BioConcentrate has no HAZCHEM rating so it needs no special storage areas, lowering the cost of transport, handling and storage. It is non-reactive with other chemicals which minimizes hazardous conditions.

## Safe for the Environment

Triple7 BioConcentrate meets the Australian 2012 Oil Spill Control Agents requirements and is listed on the AMSA register which is the gold standards in ocean spills and other water environments, including waste water.

It does not bio accumulate or upset the balance of ecosystems, which makes it safe for marine animals and plant life.

There are no known legal or application restrictions for use of this product in a water environment.

## Biodegradability

This product is Readily Biodegradable according to Australian Standards AS4351.

## Ecotoxicity

Ecotoxicity for this product meets the Australian 2012 Oil Spill Control Agents requirements and is overall practically non-toxic (IMO/GESAMP classification.) Reference ESA TR1034 May 2013.

EC50 (*Saccostrea glomerata*) is 17.1 ppm;

EC50 (*Saccostrea echinata*) is 17.5 ppm;

EC50 (*Mytilus galloprovincialis*) is 13.2 ppm;

EC50 (*Parvocalanus crassirostris*) is 14.7 ppm;

EC50 (*Allorchestres compressa*) is > 20 ppm;

EC50 (*Lates calcarifer*) is > 20 ppm;

EC50 (*Heliocidaris tuberculata*) is 13.8 ppm;

IC50 (*Isochrysis aff. galbana*) is 8.6 ppm;

IC50 (*Nitzschia closterium*) is > 20 ppm;

EC50 (*Hormosira banksia*) is > 20ppm



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