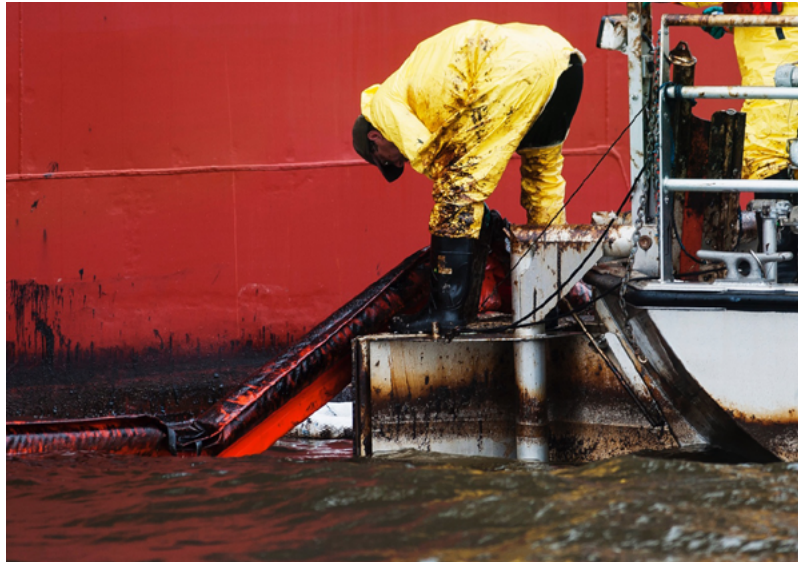


TYPES OF OIL: BUNKER C



After gasoline, diesel and other light hydrocarbons are extracted from crude oil during the refining process, a heavy residual oil remains. This product is known as bunker fuel and is graded as either A, B or C, with C being the thickest and most viscous. When mixed with a lighter petroleum product, bunker C becomes a cheap fuel for use in shipping. Most of the larger shipping vessels traversing Western Canada's waters use bunker C as fuel.

WHAT HAPPENS WHEN BUNKER C SPILLS IN SEA WATER?

Depending on the specific gravity of the bunker C, and the water density in which it is spilled, the oil could float, suspend in the water column or sink. Biodegradation of bunker C is very slow, with just five to 10 per cent expected to evaporate in the first hours following a spill.

Bunker C typically spreads into thick, dark-coloured slicks, which can contain large amounts of oil. If floating oil weathers and mixes with sediment it could transform into a nonfloating oil (NFO) and sink, causing subsurface tarballs (small, compact masses of heavily weathered oil) or tar mats (slabs of oil residue mixed with sediment and water). Refer to the NFO fact sheet for more details.

After a period of days, floating bunker C can occasionally form an emulsion. Very little of this viscous oil is likely to disperse into the water column.

WHAT TYPE OF OIL IS BUNKER C?

Bunker C is classified as a persistent, heavy oil. The exact physical-chemical properties of bunker C are determined by the deposit of crude oil from which it originated, combined with the production year and the blending ratio of the final fuel.

WHAT TYPES OF VESSELS USE BUNKER C?

Bunker C is widely used as fuel oil for deep-sea cargo vessels.

HOW DOES SPILLED BUNKER C AFFECT MARINE FLORA AND FAUNA?

The aquatic toxicity of bunker C is relatively low because it contains only small quantities of water-soluble compounds. However, floating bunker C can adversely affect surface-dwelling wildlife or wildlife that frequently surfaces, including aquatic and semi-aquatic mammals, seabirds, waterfowl, turtles and aquatic insects. These species are vulnerable to acute mortality due to hypothermia from loss of insulation, oil ingestion or inhalation of toxic fumes.

In shoreline areas, light accumulations of oil can form a ring at the high-tide line of the shore, while heavier accumulations can pool on the beach. Due to its high viscosity, beached bunker C tends to remain on the surface rather than penetrate sediments. Shorebirds and fur-bearing mammals that feed in heavily oiled intertidal habitats can suffer from contaminated or reduced populations of prey. Many shoreline plants can survive partial oiling, and roots often survive unless the substrate is heavily oiled. As biodegradation of bunker C is very slow, the product could persist on the shoreline for months or even years.

HOW IS BUNKER C CLEANED UP?

Oil recovery by brush skimmers and vacuum pumps can be very effective when used early in a bunker C spill response. Sorbent booms and sorbent pads are also effective in cleaning-up this product. Shoreline clean-up of bunker C can be very effective before the oil weathers and becomes very sticky and viscous. If bunker C transforms into an NFO, a different set of response strategies would be employed. For more details, refer to the NFO fact sheet.



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North Coast | Prince Rupert: 250-624-5666

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