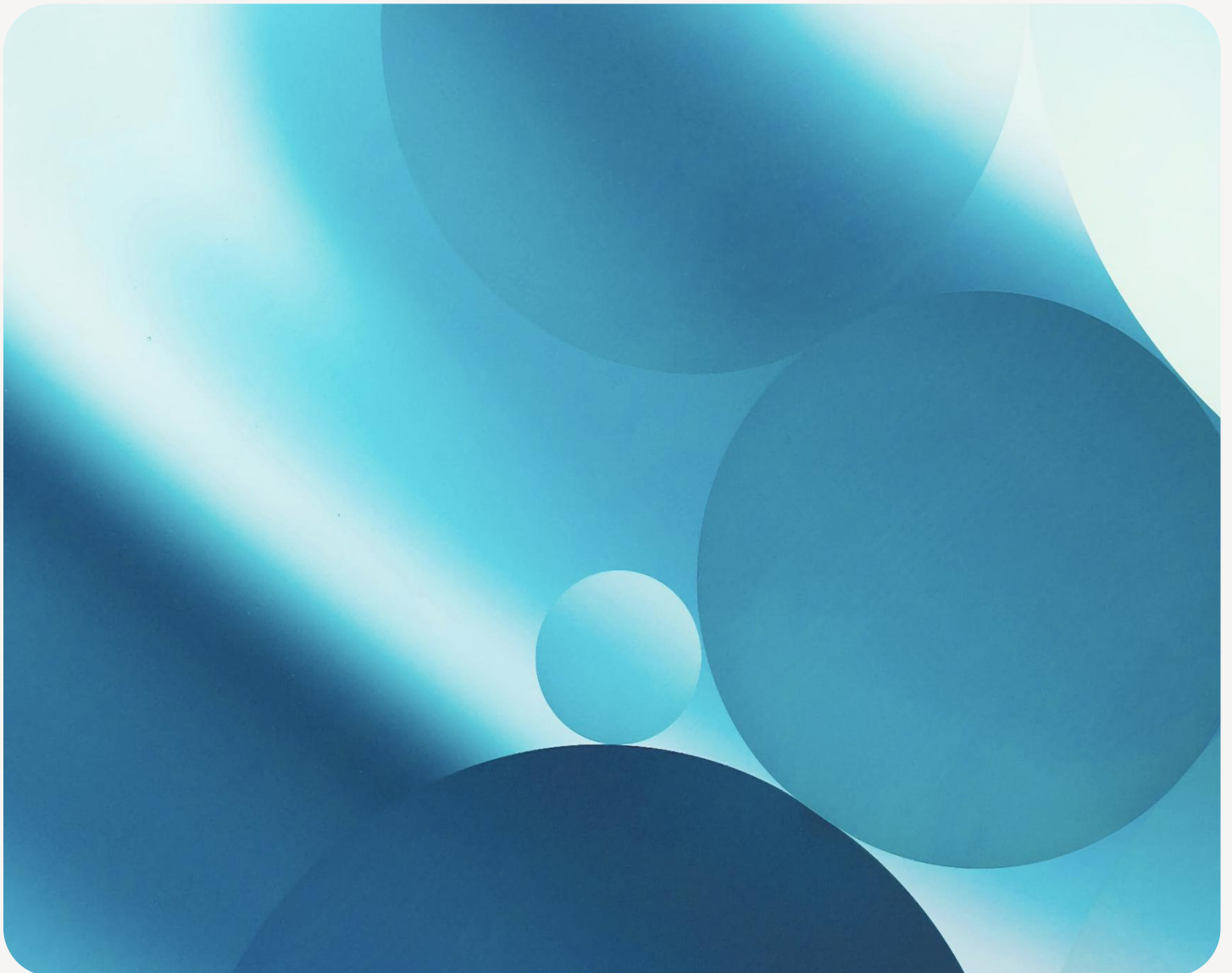


Sulnox Eco™ Fuel Conditioner Land FAQ



Introduction

This document is designed to answer “Frequently Asked Questions” (FAQs) regarding the Sulnox Eco™ Fuel Conditioner (Sulnox Eco™), with a focus on the product composition, application and benefits within the land sector.

To navigate through the FAQs, please refer to the table of contents below.

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01 Product Composition & Compatibility

Q1: Is Sulnox Eco™ biodegradable?

A1: The MSDS/SDS prepared by the manufacturer, Nouryon, states that Sulnox Eco™ is readily biodegradable.

Q2: What is the product's shelf life?

A2: The shelf life of Sulnox Eco™ as stated by the manufacturer, Nouryon, is 3 years.

Q3: Will Sulnox Eco™ work with biofuels? Which type - 1st generation (with what content) or 2nd generation like HVO?

A3: Yes, Sulnox Eco™ is compatible with biofuels and will improve combustion. The benefits are more pronounced with first generation biofuels as they are less clean when combusting due to FAME (fatty acid methyl ester) content which is absent in second generation fuels like HVO (hydrogenated vegetable oil).

Q4: Does Sulnox Eco™ work with methanol or ammonia?

A4: No. Sulnox Eco™ is for traditional fossil fuels only, it is not designed to work with alternative fuels.

Q5: Will Sulnox Eco™ help stabilise water in my fuel?

A5: Sulnox Eco™ will help stabilise free water in traditional fuels by lifting and dispersing it throughout the fuel. This encourages the secondary atomisation effect, therefore enabling cleaner, improved combustion.

Q6: Is the product safe to transport / what are the relevant codes?

A6: Yes. The description supplied by Nouryon for Sulnox Eco™ is HS code 340 290 1090 "Other - Soap, organic surface-active agents, washing preparations, lubricating preparations". The MSDS/SDS should always be supplied in conjunction with these codes which has further details from the manufacturer, Nouryon, regarding any hazards. The product is non-hazardous and non-dangerous good, and Sulnox Eco™ is regularly shipped via air as well as land and sea.

Q7: Is Sulnox Eco™ corrosive?

A7: The MSDS/SDS prepared by the manufacturer Nouryon states that Sulnox Eco™ Conditioner is non-corrosive.

02 Product Application

Q8: What is the dosage rate for Sulnox Eco™?

A8: The dosage rate is 1 Litre to 2,000 Litres for diesel and biofuels, which in practice is 25ml per 50 Litres of fuel added to a tank. The dosage rate for petrol/gasoline (both E5 and E10) is 1 Litre to 1,000 Litres of petrol, which in practice is 50ml per 50 Litres of fuel added to a tank.

Q9: Does Sulnox Eco™ require the presence of water to work?

A9: No. When using Sulnox Eco™ the presence of water is not a requirement. Sulnox Eco™ was especially formulated to work even without the presence of any water content in the fuel.

Q10: What happens if the use of Sulnox Eco™ is discontinued? Will the fuel consumption improvements experienced be lost?

A10: Yes. Customers using Sulnox Eco™ in both land vehicles and ships have seen consumption improvements drop off over a relatively short time period discontinuing the usage of Sulnox Eco™. You will also start to see carbon and deposits beginning to build up again.

Q11: What are the consequences of accidentally overdosing the Sulnox Eco™? Will the engine be harmed?

A11: No harm will come to your engine. The formulation of the Sulnox Eco™ means it will pass through the engine and cleanly combust whilst giving your engine an extra dose of detergents, even if overdosed.

Q12: Can I use Sulnox Eco™ in a bulk tank?

A12: Yes, simply add Sulnox Eco™ to the bulk tank just before the bulk delivery is discharged into the tank.

Q13: Can I have fuel delivered with Sulnox Eco™ already in the fuel?

A13: Yes, we have arrangements with bulk fuel suppliers to deliver fuel already conditioned with Sulnox Eco™. We can help you make arrangements if your current supplier does not offer this yet.

Q14: How will a bulk fuel supplier deliver fuel already conditioned with Sulnox Eco™?

A14: In practice the bulk fuel supplier will add the correct dose of Sulnox Eco™ Diesel Conditioner to the delivery vehicle's tank before filling with the base fuel. This will provide product dispersion through the agitation caused by the fuel flow while filling. Further agitation will be provided through the movement of the fuel through the baffles in the tank during transportation.

Q15: Does SulNOxEco™ require special mixing into the fuel?

A15: No, the product mixes readily with all types of fuel, it is sufficient to add conditioner at the time of filling in the correct ratio. Best practice is to add the correct amount first, then fill the tank to take advantage of the agitation in dispersing the Sulnox Eco™ Diesel Conditioner.

Q16: Can Sulnox Eco™ be used if other additives are already in use? Is it compatible with AdBlue?

A16: Yes. Sulnox Eco™ can be used in conjunction with other additives. Feedback from commercial fleet customers running the latest, Euro 6, Heavy Goods Vehicles using Sulnox Eco™ Conditioner indicate zero problems with AdBlue systems in any of the vehicles in their fleet. Sulnox Eco™ and AdBlue complement each other when used together.

03 Fuel Efficiency & Savings

Q17: Will using Sulnox Eco™ improve my fuel consumption?

A17: Results of trials in carefully monitored environment, have shown that Sulnox Eco™ typically reduces fuel consumption by c.5-15%. In a study operated by third party companies, Sulnox Eco™ has recently demonstrated its ability to reduce consumption of generator fuel by 14.5%. You can refer to the report [‘Templant Generator test’](#) which details the generator performance study.

Q18: What is the breakdown of the savings achieved over time as a percentage? i.e. better combustion, reduced friction (lubrication and cleaning effect).

A18: You will see a small economy improvement within the first month of use as the immediate combustion improvements effects are realised. This may be around 2% but can often be difficult to identify when fluctuations in consumption often vary much more than this. Over months two and three of conditioning with Sulnox Eco™, further gains will be achieved as the engine is conditioned and decarbonised. This will make up the remainder of your fuel savings. Please be aware that this will vary as engines, vehicles and fuel types also vary, as does the degree to which they are serviced and maintained.

Q19: How can I indicatively estimate savings for my fleet?

A19: You can use the Sulnox high-level [Savings Calculator](#) to estimate the annual indicative savings and CO₂ reductions, as well as return on investment, that can be anticipated from the use of Sulnox Eco™ for an individual vessel and an entire fleet.

04 Emissions & Particulate Matter Reductions

Q20: Does Sulnox Eco™ reduce greenhouse gas (GHG) emissions and particulate matter (PM) output, including smoke and soot? If yes, how?

A20: The Sulnox Eco™ unique formula does help reduce GHG emissions and PM output, including smoke and soot. Various studies undertaken with independent emissions monitoring and testing organizations prove the product's significant effect on the reduction of GHG emissions and PM output. These reductions arise from different mechanisms:

Nitrogen Oxides (NOx) – the secondary atomisation effect that the unique formula of the product promotes is principally the mechanism which lowers peak combustion temperatures which, in turn, reduces the production of NOx.

Carbon Monoxide (CO) – the oxygen availability to the fuel (both directly from Sulnox Eco™ formula and the secondary atomisation effect) reduces CO which is oxidised to CO₂.

Carbon Dioxide (CO₂) – when Sulnox Eco™ is used, often an initial minor increase in CO₂ emissions occur. This is because the product promotes oxidation of unwanted carbon deposits in the engine. Over time, this drops and levels out. As fuel economy improves, consumption lowers, and the overall CO₂ emissions drop.

Sulphur Oxides (SOx) – the cleaner combustion that the product offers, reduces SOx. This is contingent on how much sulphur is in the fuel.

Particulate Matter (PM) – the better oxygen availability to the fuel that the product offers, reduces PM output. Rather than generating wasteful, hazardous PM emissions, these are converted into useful energy through complete combustion. As a result, smoke and soot are reduced.

You can refer latest [Generator Study](#), for more information about the GHG emissions and PM reductions recorded.

Q21: How much CO₂ is associated with the combustion of Sulnox Eco™ Conditioner?

A21: At a recommended dosage rate of 1:2000 in diesel type fuels, 0.5ml of Sulnox Eco™ will emit approximately 1.3 grams CO₂ per litre of diesel (equals 0.0013 kg CO₂).

Q22: Will using Sulnox Eco™ Conditioner benefit the Diesel Particulate Filter (DPF) in my vehicle exhaust system?

A22: Yes, fleet users of Sulnox Eco™ Conditioner have found that the life of each vehicles Diesel Particulate Filter (DPF) has been greatly extended, due to the reduced soot load.

Q23: Will using Sulnox Eco™ Diesel Conditioner benefit the Exhaust Gas Re-circulation Valve (EGR valve) in my vehicle exhaust system?

A23: Yes, the reduction in soot in the exhaust gasses when using Sulnox Eco™ Conditioner reduces the soot load on the Exhaust Gas Re-circulation Valve (EGR valve) thus reducing the chance of it clogging and sticking.

05 Third Party Approvals

Q24: Does fuel conditioned with Sulnox Eco™ remain within specification?

A24: Yes, Independent Certification agency Bureau Veritas certified that an EN590 compliant diesel fuel, remained EN590 compliant, following conditioning with Sulnox Eco™.

Q25: What is the Original Equipment Manufacturers' (OEM) approach to Letters of No Objection (LONO)?

A25: We have several Letters of No Objection (LONO) from truck companies available on request stating that as long as the fuel (once dosed with an additive) remains in specification (of EN590 diesel fuels) then they do not object to the use of the additive. The OEMs have indicated that as long as the fuel is in ISO8217 specification, then they have no objection. The fact that Sulnox Eco™ does not take the fuel out of the ISO8217 specification (as per independent Lloyds Register and VPS studies) means that no problems will be encountered and no harm done by using Sulnox Eco™.

Q26: Does conditioning fuel with Sulnox Eco™ improve the lubricity of the fuel?

A26: Yes, VPS have conducted tests and concluded that Sulnox Eco™ improved lubricity of the fuel by more than 17% (as per the [VPS study report](#)).

Q27: Are you insured in case of engine damage?

A27: Yes, we have an insurance policy in place to the value of £5 million. No claim has ever been made.

06 Mechanical Aspects

Q28: How does Sulnox Eco™ stop the carbon build up on pistons?

A28: Sulnox Eco™ gradually exfoliates and cleans carbon deposits thanks to its detergency properties. The reduction of particulate matter production, by Sulnox Eco™ aiding the fuel to burn more completely, then prevents the build-up of carbon reoccurring. You can refer to the report [‘Engine Parts Before and After’](#) which demonstrates (with photos) the cleaning effect of Sulnox Eco™.

Q29: Does Sulnox Eco™ help with sludge, wax, etc., both from the point of prevention as well as eliminating?

A29: Sulnox Eco™ was not designed to primarily deal with sludge build ups and wax. Its primary purpose is the reduction of emissions and fuel savings. If you are using a specific product to deal with your sludge issues, then we advise that you continue to use this.

Q30: Will I notice any changes in my vehicle when using Sulnox Eco™ Conditioner?

A30: Yes, testimonials from vehicle operators state after a month of treating their fuel tank with Sulnox Eco™ Conditioner, they consistently report noticing less vibration, a quieter engine and improved throttle response.

Your fleet savings start here.

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