

## Inactivir® Stabilising Viral Inactivation Buffer Selection Guide

The **Inactivir®** range of Stabilising Viral Inactivation Buffers have been developed to be used in sample tubes to inactivate viral pathogens that are present in patient or other potentially pathogenic samples. The inactivation of viral pathogens on sample collection using **Inactivir®** will facilitate risk assessments that reduce the requirement for Category 2+/3 handling of potentially pathogenic samples, increasing both the safety of workers and the speed and ease of testing.

A range of **Inactivir®** buffers are available that have been optimised for specific use cases. This guide will help in the selection of the most appropriate buffer for your use case.

**Inactivir®** buffers are designed to be used at a maximum sample to buffer ratio of 1:3.

**Inactivir®** is a guanidine-based buffer containing Triton X-100. This is based on published work demonstrating complete viral inactivation of SARS nCoV-19, Ebola, Influenza A & B, RSV and a wide range of other viruses.

**Inactivir® PLUS** is again a guanidine-based buffer that uses an alternate REACH-compliant detergent. Under REACH regulations Triton X-100 should not be used from 2021 onwards and is only in current large-scale use due to pandemic exclusions. This buffer is REACH compliant and features an improved buffer system for stabilisation of RNA in samples.

**Inactivir® SD LITE** is a non-guanidine buffer that is based on established inactivation principles used in production of human products for several decades with no evidence of viral transmission through those products in the entire timescale. Specific testing has shown inactivation of a wide range of viruses including SARS nCoV-19. This buffer is designed for Point of Care (POC) or near-POC testing, with minimal additional components that could interfere with downstream testing. **This buffer does not stabilise RNA within samples and is suited for immediate testing use.**

**Inactivir® SD COMPLETE** has the same non-guanidine inactivation system, but additionally contains buffer components that inactivate nucleotide degrading enzymes including RNAses. It therefore stabilises samples to allow remote testing away from the site of sampling.

**Inactivir® SDI STANDARD** includes an additional chaotrope along with the non-guanidine inactivation system. This provides excellent stability for samples and allows the sample to be used directly in silica-based purification systems.

**Inactivir®, Inactivir® PLUS** and **Inactivir® SDI STANDARD** allow samples to be added directly to silica-based nucleic-acid purifications. These have been validated with both column and magnetic-bead based methods. This means the amount of sample used in the purification can be doubled, as there is no need to add binding buffer in the first step of processing. This will increase sensitivity as twice the amount of sample is purified.

**Inactivir® SD LITE** and **Inactivir® SD COMPLETE** are capable of being used in some 'direct to PCR' assays. Testing has shown compatibility with standard RT-QPCR reactions for SARS nCoV-19 with addition of 2.5

µl per 20 ul reaction with some manufacturer mastermixes. They have both also been validated for direct-to-LAMP testing methods using published NEB primers and mastermix.

The following table summarises the properties of **Inactivir®** buffers.

Buffer	Guanidine-based	Suitable for 'direct-to-PCR' or 'direct-to-LAMP' assays	Compatible with 'direct to RNA purification'	Stabilise RNA	Mucolytic (saliva testing)
Inactivir®	X		X	+++	X
Inactivir® PLUS	X		X	+++	X
Inactivir® SD LITE		X		-	X
Inactivir® SD COMPLETE		X		++	X
Inactivir® SDI STANDARD			X	+++	X

**Inactivir®** buffers containing chaotrope will denature nucleases and stabilise samples until extracted (+++ for stabilisation). **Inactivir® SD COMPLETE** contains a proprietary stabilisation buffer that provides protection against nuclease degradation but does not fully denature nucleases (++ for stabilisation). **Inactivir® SD LITE** does not contain any stabilising agents (- for stabilisation).

All buffers are mucolytic and show rapid reduction in viscosity of saliva and sputum samples when mixed at up to a 1:3 ratio of sample to buffer.

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## Product Information

Product Code	Description
VIB-001	Inactivir® Viral Inactivation Buffer
VIB-002	Inactivir® PLUS (REACH Compliant) Viral Inactivation Buffer
VIB-003	Inactivir® SD LITE Viral Inactivation Buffer
VIB-004	Inactivir® SD COMPLETE Viral Inactivation Buffer
VIB-005	Inactivir® SDI STANDARD Viral Inactivation Buffer