Version 2017-10-16

Risk Assessment of Laboratory Work with Chemicals (AFS 2011:19)1

Department/Division: Pure and applied Biochemistry

Operation/Activity: PCR

The operation includes handling of the following chemicals, mixtures and solutions

	Chemical/Mixture/Solution	CAS No.	Amount	Indications of danger
1	Reverse/Forward primer	N/A	2 µl (each)	Not hazardous
2	AQ97 High Fidelity DNA Polymerase 5x sMaster mix	N/A	10x1.25 ml	Not hazardous
3	Nuclease free water	N/A	5 mL	Not hazardous
4	Template DNA	N/A	> 10 µl	Not hazardous
5	Betaine (5M)	107-43-7	10 mL	Not hazardous
6	Ethanol	64-17-5	500 mL	Highly flammable liquid and vapour. Causes serious eye irritation.

Identification of separate operations/activities that may involve the risk of accident or risk to health

	Operation/Activity	Risk/Problem	Consequence	Probability	Assessed risk	Risk-reducing measures
1	Work on ice	Exposure to cold	Insignificant	Unlikely	Not Hazardous	Wear protective clothing (safety glasses, lab coat, gloves).
2	Using the Bunsen Burner	Exposure to the Bunsen Burner	Serious	Possible	Hazardous	Wear protective clothing (safety glasses, lab coat). Never leave the Bunsen burner out of sight.
3	Cleaning working area	Handling toxic component (ethanol)	Mild	Unlikely	Moderately Hazardous	Wear protective clothing (safety glasses, lab coat). Close any source of fire. Be aware where the eye wash stations and the fire extinguishers are in the lab. Keep container tightly closed. IF IN EYES Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
4	PCR machine	Exposure to heat	Mild	Possible	Hazardous	Wait until lid has cooled down before opening

	Yes/No	Comments:
Rules for working alone has been observed	yes	Supervisor needs to be present at all time, no individual work allowed
The possibility of evacuation and ventilation/water/power failure has been taken into account	yes	Work will be stopped, flasks closed, staff will evacuate (long power outage) or wait until the power/water/ventilation will be turned on
Environmental issues have been considered	yes	Follow waste management rules, no concentrated substance will be poured down the drain
Special risk assessment for pregnant staff has been done	yes	Pregnant individuals should be aware of irritating or harmful reagent buffers, ethanol exposure, and handling of biological/GMO materials.

References:

Chemical Database KLARA

AQ97 High Fidelity DNA Polymerase 2x Master Mix, Ampliqon catalogue

General Safety Regulations

Date: 2026-06-17

Risk assessment made by:

Name: Emma Esping (2025) , Hamsini Bharat (2026)

Risk assessment checked by:

Name:

1) AFS 2011:19 Chemical Hazard in the Working Environment, provisions (amanded and reprinted in 2014:5; 2014:43; 2017:4)

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