Risk Assessment of Laboratory Work with Chemicals (AFS 2011:19)1 (LBE)2 (MSBFS 2020:1)3

Department/Division: **Pure and Applied Biochemistry**

Operation/Activity: **His-Tag Purification using Cytiva HisTrap HP**

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

	Chemical/Mixture/Solution	CAS No.	Amount	Indications of danger
1	di-Sodium hydrogen phosphate dihydrate	10028-24-7	1 kg	Not Hazardous
2	Sodium dihydrogen phosphate dihydrate	13472-35-0	1 kg	Not Hazardous
3	NaCl	7647-14-5	1 kg	Not Hazardous
4	Imidazole	288-32-4	500 g	Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. May damage the unborn child.
5	EDTA	60-00-4	250 g	Causes serious eye irritation.
6	0.1 M $NiSO_4$	15244-37-8	50 mL	Harmful if swallowed or if inhaled. Causes skin irritation. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing cancer. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure if inhaled. Very toxic to aquatic life with long lasting effects.
7	20% ethanol	64-17-5	500 mL	Flammable liquid and vapour. Causes serious eye irritation.
8	30% isopropanol	67-63-0	500 mL	Highly flammable liquid and vapor. Causes serious eye irritation. May cause drowsiness or dizziness.

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	Handling sodium phosphate	Exposure to irritant	Serious	Possible	Hazardous	Avoid breathing dust. Wash skin thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/ eye protection/ face protection. IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
2	Handling imidazole	Exposure to hazardous chemical	Serious	Possible	Hazardous	Do not breathe dust. Wear protective gloves/ protective clothing/ eye protection/ face protection. IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
3	Handling EDTA	Exposure to irritant	Serious	Possible	Hazardous	Wash skin thoroughly after handling. Wear eye protection/ face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention.
4	Handling $NiSO_4$	Exposure to hazardous chemical	Serious	Possible	Hazardous	Obtain special instructions before use. Avoid release to the environment. Wear protective gloves. IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. IF ON SKIN: Wash with plenty of water. IF exposed or concerned: Get medical advice/ attention. Dispose of in designated container.
5	20% ethanol	Exposure to irritant and flammable agent.	Serious	Possible	Hazardous	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical/ ventilating/ lighting/ equipment. Use non-sparking tools. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
6	30% isopropanol	Exposure to irritant and flammable agent.	Serious	Possible	Hazardous	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical/ ventilating/ lighting/ equipment. Use non-sparking tools. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

	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
Special risk assessment for pregnant staff has been done	**Yes**	May not work with imidazole or $NiSO_4$

References:

General safety regulations

KLARA

Date: 2026-06-17

Risk assessment made by:

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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; 2018:2; 2019:9)

2) Lag (2010:1011) om brandfarliga och explosiva varor (LBE)

3) MSBFS 2020:1 föreskrifter om hantering av brandfarlig gas och brandfarliga aerosoler

Last updated 2025-07-24