



Risk assessment

SB/IB-Sterile work/LAF-bench

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Final risk assessment of the method

1. Acceptable risk

1. State the premises in which the activity is taking place

Kemi forskarhus 1

Floor Room

Kemi kurshus

Floor Room

Plan 6 6107 Molbio Lab

Plan 6 6112A Big lab Systems Biology

Plan 6 6116A Small lab Systems biology



2. Description of activity

Method

Inoculation of a micro-organism from a culture to fresh medium

Work in LAF-bench. Use available equipment stationed in the bench. Sterilize the working area/bench with Desytol. Transfer inoculum to fresh media. Sterilize opening of vessels or other equipment in a Bunsen flame before and after each activity. Clean the working space with Desytol. Liquid biological waste is collected in special container for the purpose and glassware used in contact with biological agent is decontaminated with Desytol. Contaminated disposables are collected in special bag for the purpose.

3. Products

Product name	Concentration	Form	Quantity	Danger	Comments
Desytol 70% R10 S16 , S2 Lists Organic compounds		Liquide	10 ml		60 % ethanol, 10 % 2-proanol
Methane CLP-legislation H220 , H280 P210 , P377 , P381 , P403 Older legislation R12 S16 , S33 , S9		Gas			Naturgas, komprimerad
Naturgas. Transporterad i det svenska naturgasnätet		Gas			Metan 88,97%

Hazard statements

H220 Extremely flammable gas.

H280	Contains gas under pressure; may explode if heated.
Precautionary statements	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381	Eliminate all ignition sources if safe to do so.
P403	Store in a well-ventilated place.
Risk phrases	
R10	Flammable.
R12	Extremely flammable.
Safety advice phrases	
S16	Keep away from sources of ignition - No smoking
S2	Keep out of the reach of children
S33	Take precautionary measures against static discharges
S9	Keep container in a well-ventilated place

4. Risk category

a:very high risk

5. Level of exposure

Low

6. Ventilation

Level of protection 1 - bench

7. Biological material

class 1

8. Comments on Biological material

Work in the LAF-bench:

To protect sample for contamination.

To avoid spores from spore forming fungi to be spread in the laboratory.

AFS 2005:1

Risk group 1 contains biological agents which do not normally cause infections in humans, together with non-pathogenic strains of pathogenic biological agents. Risk group 1 also includes biological agents which do not cause infection but can cause other ill-health, such as hypersensitivity or toxigenicity, which is not connected with infections.


Good microbiological practice

- observe cleanliness and tidiness,
- avoid rings, bracelets, untied hair and other things which can impede good hygiene and contribute to the spread of infection,
- not eating, drinking, applying cosmetics, using tobacco products or handling foodstuffs within the working area,
- not pipetting by mouth or otherwise working in such a way that biological agents are liable to enter the mouth,
- avoid formation and spread of aerosols, spillage and spatter,
- as far as possible avoid using syringes and sharp objects,
- handle syringes and sharp objects which have been in contact with infectious agents in a safe manner and transfer them immediately to containers intended for infectious waste/sharps without recapping syringe needles,
- handle cultures in closed vessels or in some other way to prevent them from spreading,
- use protective clothing in but not outside the working area
- wash and /or disinfect the hands after dirty work. when work is finished

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and after using gloves
• have routines for dealing with unwanted events

9. Risk codes

F

Highly flammable

10. Comments on risk codes

Desytol
Risk code R-10 Flammable
Boiling point, +78 oC

Naturgas
Risk code R12 Highly flammable.
The gas is supplied from a central system in the building.

11. Premises

ventilation , other

12. Comments on premises

Desytol
Avoid contact with skin and eyes. Avoid inhalation of vapours. Do not smoke or use open fire or other sources of ignition. Provide good ventilation.
Store in original packaging. Store in a tightly closed container in a cool, well ventilated room, protected from direct sunlight. Flammable liquid storage.

Naturgas
Avoid having Bunsen flame close to open bottles.

13. Protective signs

other

14. Comments on protective signs

Natural gas from central system.
Biological agents from riskgroup 1

15. Personal protective equipment

protective gloves , protective clothing

16. Comments on Personal protective equipment

17. Describe the technical equipment

LAF-bench
Manual available nearby the bench.

Bunsen burner
Gas from a central system in the house. Flame is adjusted on/of via the orange valve, positioned at the gas outlet, by pressing down and turning. The flame is fine-tuned via regulator on the burner.

18. Environment

emission to air

19. Comments on environment

Desytol, ethanol evaporation. Very small effect.

Natargas
Do not discharge into any place where its accumulation could be dangerous.

20. Waste management

biological waste

21. Comments on Waste management

Liquid biological waste is discarded in assigned container; contaminated disposable waste is collected in assigned plastic bag. The waste is autoclaved and decontaminated liquid waste poured out in the sink; solid waste thrown in the normal waste bins.

22. Emergency equipment

first aid kit , emergency shower , eye shower , fire-extinguisher water , fire-extinguisher foam , fire-extinguisher carbonic acid , fire blanket , absorbing substance

23. Comments on Emergency equipment

Natargas
ACCIDENTAL RELEASE MEASURES
Use protective clothing. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Evacuate area. Ensure adequate air ventilation. Eliminate ignition sources.
Try to stop release.
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Ventilate area.

Respiratory protection is not needed unless gas displaces the air and causes deficiency of oxygen and possibility of asphyxiation. Symptoms may include loss of mobility/consciousness. In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor.
Apply artificial respiration if breathing stopped.
Incomplete combustion may form carbon monoxide

Do not extinguish a leaking gas flame unless absolutely necessary.
Spontaneous/
explosive re-ignition may occur. Extinguish any other fire.

Desytol
ACCIDENTAL RELEASE MEASURES
Wear protective clothing. Do not allow to enter drains, sewers or watercourses. Absorb spillage with non-combustible, absorbent material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations for waste

Fire-fighting
Dry chemicals. Carbon dioxide (CO₂). Water spray. Alcohol resistant foam. Improper extinguishing media Do not use water jet.

Inhalation; Fresh air and rest. Get medical attention if any discomfort continues. Perform artificial respiration if breathing has stopped.
Skin contact; Remove contaminated clothes and rinse skin thoroughly with water.
Eye contact; Rinse the eye with water immediately. Make sure to remove any contact lenses from the eyes before rinsing. Contact physician if discomfort continues.
Ingestion; Drink a few glasses of water or milk. Do not induce vomiting.
Contact physician if larger quantity has been consumed.

24. Hazardous actions

ventilation failure , other

25. Comments on Hazardous actions

Keep gas/flame at proper distance to flammable chemicals.

26. Special instructions to other personel

27. Accidental readiness

Use protective clothing. Localize (have in close vicinity) fire-extinguisher

28. Final risk assessment of the method

1. Acceptable risk

29. Comments on final risk assessment and additional risk reducing measurements

**Signature
Supervisor**

Date

Christer Larsson

Date of reassessment: