

Job Safety Analysis (JSA)Case and doc. no in ePhorte:
2012/11454-30

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Prepared by :
HSE staff, OPADate : 24.09.2012
Edition : 1**Unit:** Hitachi S-3000N SEM**Date:** __/__/20__**Job task to which this Job Safety Analysis applies:** Analyse of geological materials with a Hitachi S-3000N Scanning Electron Microscope**Responsible employer:** _____**Time of performance of the work:** _____**Persons involved in performance of the work:** _____**Description of the work:** SEM imaging and EDS point analysis of geological materials.**Training required:** Introduction to the use of the Hitachi S-3000N SEM (length of the training variable according to the user experience).**PPE and other protective equipment to be used:** gloves (during sample preparation and when introducing the specimen in the chamber)**Analysis:**

Sub-tasks	Hazards	Preventive Measures
Operation	Ionization radiation	SEM is regularly serviced and safety checked. There should be no exposure to X-rays or to the ionization radiation. The sample chamber is shield and interlocked. It should not be opened when in use. The operator is not exposed to any radiation under normal working mode. Never deviate from normal mode or try to override the interlock.
	Electric shock in contact with the inside of the instrument	Do not remove the protective covers from the instrument. Do not disconnect the high-voltage cable.
	Burns in contact with the inside of the instrument	Do not remove the protective covers from the instrument.

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Loading sample in the SEM chamber	Personal injury cause by jamming body parts	Do not hold the monitor unit at its bottom rear part (your fingers can be jammed between the monitor and the table). When changing specimens in the specimen goniometer stage be aware that the stage is heavy (your hand can be jammed).
	Personal injury caused by drop of the specimen goniometer stage	Do not remove the specimen goniometer stage from the column unit. The specimen goniometer stage is heavy (injury to your hands or feet can occur if you drop it).
Prolonged use	Eye strain	Do regular breaks (10 min/h during operation)
	Tiredness	Do regular breaks (10 min/h during operation)
	Musculoskeletal strain or injury	Do regular breaks (10 min/h during operation) Adjust height of the seat, so that the back and neck and upright

Participants in the analysis and signatures

Role	Name	Date/signature
Lab Manager/deputy	_____	_____/_____
_____	_____	_____/_____
_____	_____	_____/_____

The Job Safety Analysis has been read (signatures of users who will perform or be affected by the work)

Name	Date/signature
_____	_____/_____
_____	_____/_____
_____	_____/_____