

Work and laboratory safety on board

Guidelines of the International Maritime Organization (IMO), of national authorities and the German Berufsgenossenschaft (BG) for traffic and transport apply onboard RV Polarstern. If you like to take a closer look you will find all relevant guidelines and regulations on board, but the safety information that is directly relevant is content of this guide, the accompanying safety documents from AWI or in the safety instructions given by the ship's crew. Captain and expedition leader are responsible for the training of crew members and expedition participants on board and the check of correct implementation of regulations. At the beginning of each cruise leg, there will be an introduction by the ship's officers about how to behave safely in terms of life and work on board.

Work safety on board

Together with the ship's officers, the expedition leader and designated safety representatives will check the proper use of personal protective equipment (PPE) for work. If certain research equipment is handled or work processes require additional safety measures the expedition leader or safety representative will give specified instructions beforehand. Basic instructions regarding general work safety on board will be given to all expedition participants by the ship's officers during the general safety briefing at the beginning of each leg. The scientists training manual contains the very basic instructions regarding safe work on deck. Specified safety instructions for certain devices are part of the ship board procedures and will be given beforehand if the respective research equipment will be used. The ship board procedures for all research devices that are used on board can be found on the bridge. For some areas of research work, which include high power use for example, additional and detailed work safety instructions are available and will be given to all participants.

Regarding work safety on the ice, refer to chapter [Safety on the ice](#)

The following standard PPE needs to be used for work on deck, in cargo holds or other general work areas:

(Additional PPE might be necessary in special occasions. This will be announced beforehand as stated above.)

- working life vest: there is a danger of falling into the water during many different jobs on board. Vests need to be worn:
 - on the working deck while the ship's rail is open
 - on the working deck in heavy seas or waves going over deck
 - always in zodiacs, dinghies, working boats
- helmets: Many jobs on board can be dangerous due to objects falling, toppling, swinging or flying off from moving parts as well as hitting one's head on parts of machines or facilities. By not wearing an effective head protection, life-threatening injuries can result. Helmets need to be worn on deck if there is the risk of falling (>1m), during crane operation, while wires and ropes are under load, in heavy seas or waves going over deck.
- safety shoes: protect the user from foot injuries and need to be worn during work on deck, in cargo holds or other areas of work. Hitting one's feet against objects, falling or pointed objects as well as hot or corrosive liquids are the main risks on board. A good safety shoe limits the risk of accidents by tripping, slipping and falling.
- gloves: Protecting the hands is necessary if rough, sharp, cold, hot or live parts must be touched. Handling irritating or corrosive liquids require safety gloves as well. If unsuitable or no hand protection is used, skin-abrasions, cuts, burns, frostbites, chemical burns or electric flashovers might occur.

Working life vests and helmets are available on board. Safety shoes and gloves will be handed out by the AWI clothing store.

For the usage of the personal protective equipment you should also see the „Handbuch See“ of the BG traffic and transport. The book is available onboard. Further protective equipment which is not explicitly mentioned here has to be used according to the guidelines of the BG for traffic and transport or according to the regulations onboard.

Lab safety

The expedition leader has the overall responsibility for safety in laboratories, which includes the development of risk assessments for the respective lab works. To delegate parts of the lab tasks and to ensure consistent implementation of safety regulations in the laboratories, one of the scientists will be nominated for *Laboratory safety representative* and in charge of general safety in all labs. Additionally, there will be a *Laboratory manager* for each lab and the specific work which is done inside, including the provisioning and storing of necessary chemicals with respect to amounts allowed and proper storage. Please find explanations here: [People in charge](#)

Generally, the regulations which apply for AWI laboratories ashore are also valid for those on board. Due to overriding requirements from the vessel's classification society, some constructional and organisational aspects in the laboratories on board might be different compared to those ashore. E.g. doors on board always open to the inside of the room, while lab doors ashore need to open to the outside/alleyway according to regulations.

The AWI operating instruction with general safety information for laboratories can be found here:



There are designated safety representatives on board who can help you in case of questions or problems. All responsible persons can be found here: [People in charge](#)

Information regarding the use of PPE in the field and on the ice can be found here: [PPE on the ice](#)

Be an example for unexperienced colleagues and other participants!

Template for risk assessment:

Radiation safety instructions for working with „open“ radionuclides on board Polarstern:

Delegation of laboratoy Managers:

? Unknown Attachment

General laboratory instructions AWI:



Gefährdungsbeurteilung



Laborordnung allg. 20



Bestellung Laborleiter

Annual safety training by AWI:



Sicherheitsunte...N2018-01-05.pdf