

This instruction applies to single damaged or defective batteries and to single items of equipment containing damaged or defective cells and batteries of UN Nos.3090, 3091, 3480, 3481, 3551 and 3552.

The following packagings are authorised,for a single damaged or defective battery and for a single item of equipment containing damaged or defective cells and batteries, provided that the general provisions of 4.1.1 and 4.1.3 are met:

For batteries and items of equipment containing batteries:

Rigid large packagings conforming to the packing group I performance level, made of:

- steel (50A);
- aluminium (50B);
- metal other than steel or aluminium (50N);
- rigid plastics (50H);
- plywood (50D);
- rigid fibreboard (50G)

Large packagings shall also meet the following requirements:

- (a) The damaged or defective battery or equipment containing such cells or batteries shall be individually packed in an inner packaging and placed inside of an outer packaging. The inner packaging or outer packaging must be leak-proof to prevent the potential release of electrolyte.
- (b) The inner packaging must be surrounded by sufficient non-combustible and electrically non-conductive thermal insulation material to protect against a dangerous evolution of heat.
- (c) Sealed packagings must be fitted with a venting device when appropriate.
- (d) Appropriate measures must be taken to minimize the effects of vibrations and shocks, prevent movement of the cells or batteries within the package that may lead to further damage and a dangerous condition during transport. Cushioning material that is non-combustible and electrically non-conductive may also be used to meet this requirement.
- (e) The non-combustibility of the thermal insulation material and the cushioning material must be assessed according to a standard recognised in the country where the packaging is designed or manufactured.

For leaking cells or batteries, sufficient inert absorbent material must be added to the inner or outer packaging to absorb any release of electrolyte.

Additional requirements:

Cells and batteries must be protected against short circuit.