

The Easy HANDBOOK

of European SDSs

SECTION 10:

stability and reactivity



What information do I need to provide in section 10 of the SDS?



10.1 Reactivity



10.2 Chemical stability



10.3 Possibility of hazardous reactions



10.4 Conditions to avoid



10.5 Incompatible materials



10.6 Hazardous decomposition products

Section 10 of the SDS **describes the stability** of the substance or mixture and the possibility of **hazardous reactions** occurring under certain conditions of use and if released into the environment, including, where appropriate, a reference to the test methods used. If it is stated that a particular property does not apply or if information about a particular property is not available, the reasons must be given.

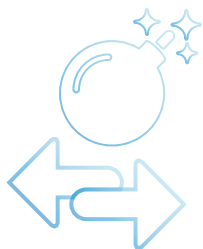
10.1

subsection

FIRST STEP Reactivity

10.1.1. A description of the reactivity hazards of the substance or mixture must be given. **Where available**, specific test data must be provided for the substance or mixture. However, the information may also be based on general data for the class or family of the substance or mixture if such data adequately represent its anticipated hazard.

10.1.2. **If no data are available** for mixtures, data on substances in the mixture must be provided. To determine incompatibility, you must consider the substances, containers and contaminants that the substance or mixture might be exposed to during transportation, storage and use.



10.2

subsection

SECOND STEP

Stabilità chimica



It shall be indicated if the substance or mixture is stable or unstable under normal ambient conditions and under anticipated storage and handling conditions of temperature and pressure. Any stabilisers which are, or may need to be, used to maintain the chemical stability of the substance or mixture must be indicated. The safety relevance of any change in the physical appearance of the substance or mixture must also be reported.

For **desensitized explosives**, information on shelf life and instructions on how to verify desensitisation must be provided. It must also be indicated that the elimination of the desensitizing agent will turn the product into an explosive.

Examples of common standard phrases that can be used in this subsection for stable substances or mixtures include:

- “Under storage at normal ambient temperatures (from -40 °C to +40 °C), the product is stable”;
- “No hazardous reaction when handled and stored according to provisions”;
- “No known hazardous reactions”.

The risks associated with stability and reactivity are related to the physical and chemical properties indicated in section 9.

As we have already mentioned in the last appointment, practice has shown that section 9 generally contains numerical (measured) values relating to chemical and physical properties, while section 10 contains a description of the intrinsic (qualitative) properties, including potentially dangerous interactions with other substances, deriving from (or related to) these values. Some information on product stability can also be reported in section 7 of the SDS (e.g., incompatibilities in subsection 7.2) and section 8 (e.g., protective measures in subsection 8.2).

In such cases, repetitions can be avoided by cross-referencing, so that the content of section 10 is focused on describing the hazards and their consequences. Since information must be written clearly and concisely, **repetition should be avoided.**

10.3

subsection

THIRD STEP

Possibility of hazardous reactions



It must be stated if the substance or mixture might react or polymerise, releasing excess heat or pressure, or creating other hazardous conditions. **The conditions under which such hazardous reactions may occur must be described.**

Keep in mind that information, e.g., on dust explosion hazard is given in sections 2 and 9, and there is therefore a need to check for consistency or potential overlap.

There is also potential overlap between subsection 10.1 "Reactivity", which also relates to the reactivity hazards, and section 10.3 "Possibility of hazardous reactions". The information in subsection 10.3 may be restricted to hazardous outcomes resulting from specific reactivity. For example, a substance can be described as a strong acid in subsection 10.1; this implies an intrinsic risk of a hazardous reaction with bases. Subsection 10.3 can be reserved for specific outcomes of reactivity (polymerisation involving excess pressure or heat) and for information on reaction conditions. There is no need to duplicate content in both subsections.

10.4

subsection

STEP FOUR

Conditions to avoid

Conditions such as temperature, pressure, light, shock, static discharge, vibrations or other physical stress which might result in a hazardous situation shall be listed and, if appropriate, a brief description of measures to be taken to manage risks associated with such hazards shall be given.

The advice provided must be consistent with the physical and chemical properties described in section 9 of the SDS.

For **desensitised explosives**, information shall be given on measures to be taken to avoid the unintentional removal of the desensitizing agent. In addition, the conditions to avoid shall be listed if the substance or mixture is not sufficiently desensitised.

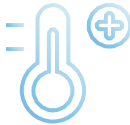
The content of this subsection potentially overlaps with subsection 7.2 "Conditions for safe storage, including any incompatibilities" and there is therefore a need to check for consistency or possible overlap.

If relevant, advice on specific storage requirements must be provided, such as:

a) manage risks

how to manage risks associated with:

- i) explosive atmospheres;
- ii) corrosive conditions;
- iii) flammability hazards;
- iv) incompatible substances or mixtures;
- v) evaporative conditions;
- vi) potential ignition sources (including electrical equipment).



b)
control the effects

how to control the effects of:
i) weather conditions;
ii) ambient pressure;
iii) temperature;
iv) sunlight;
v) humidity;
vi) vibration.

c)
**substance/
mixture**

how to maintain the integrity of the substance or mixture using:
i) stabilisers;
ii) anti-oxidants.

d)
other advice

other advice, such as:
i) ventilation requirements;
ii) specific designs for storage rooms or vessels (including retention walls and ventilation);
iii) quantity limits for storage conditions (if relevant);
iv) packaging compatibilities.

10.5

subsection

FIFTH STEP

Incompatible materials

Families of substances or mixtures or specific substances such as water, air, acids, bases, oxidizing agents with which the substance or mixture could react to produce a hazardous situation (e.g. an explosion, a release of toxic or flammable materials or the release of excessive heat) shall be listed and, if appropriate, a brief description of measures to be taken to manage risks associated with such hazards shall be given.



It is not necessarily good practice to give a long list of "incompatible materials" which includes many substances with which the product is unlikely to ever come into contact. A balance should be sought between diluting the communication of relevant incompatibilities with too long a list and the potential risks of omitting a specific incompatible material. The use of substance types or classes (e.g., "aromatic solvents") rather than listing individual substances may be preferable and avoids long lists of individual substances.

10.6

subsection

SIXTH STEP

Hazardous decomposition products

Known and reasonably anticipated hazardous decomposition products resulting from use, storage, spill and heating shall be listed. Hazardous combustion products shall be included in section 5 of the safety data sheet.

The possibility of degradation to unstable products shall be addressed in this subsection.



Focus on...
consistency
with other
sections

Examples of common standard phrases that may be used, where appropriate, in this subsection for stable substances or mixtures include:

- “Does not decompose when used for intended uses”;
- “No known hazardous decomposition products”.

An assessment of the consistency of Section 10 with the following sections is required:

- **SECTION 2:** Hazards identification;
- **SECTION 5:** Fire-fighting measures;
- **SECTION 6:** Accidental release measures;
- **SECTION 7:** Handling and storage;
- **SECTION 13:** Disposal considerations.