

storecard

MERCK

Mixed storage
of chemicals





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The life science business of Merck operates
as MilliporeSigma in the U.S. and Canada.

- risks involved in storing incompatible products together are minimized.
- dangerous, violent reactions, such as the generation of flammable gases or very toxic gases are prevented.
- in the event of fire, toxic smoke is avoided.

When the recommendations for mixed storage of chemicals of StoreCard are used, national regulations for separate and segregated storage must also be adhered to.

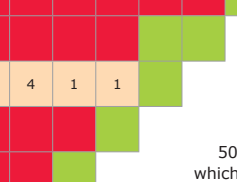
The mixed storage table indicates whether a product in a particular storage class may be stored together with one in another class, whether such mixed storage together is prohibited (separate storage required) or whether there are restrictions on mixed storage that have to be observed (segregated storage in the same storage area required).

The term “separate storage” means locating products in different storage areas. A storage area is a section of a warehouse is separated from other rooms by either by fire-resistant walls and ceilings or safety cabinets or both. Separate storage may be necessary to avoid the increased risk which may happen if contact occurs between products of different storage classes.

The term “segregated storage” means storage in the same storage area where the products are separated from one another by gaps or barriers (e.g. walls, non-combustible substances of storage class 10-13) or in safety cabinets made of non-combustible material.

The mixed storage of products of differing storage classes is only permitted if certain conditions are met (e.g. identical extinguishing agent for all products, identical temperature conditions).

Segregated storage within one area may also be necessary if certain products are in the same storage class, but have special properties. This is also the case for products in differing storage classes, with particular properties, for which mixed storage in accordance with the mixed storage table is normally permitted (Example: cyanides must not be stored together with substances, such as acids, with which they can form hydrogen cyanide.). Information on this is available in the hazard and precautionary statements (e.g. H225, H302, H332, P210, P240, P403 + P233). However, chapter 10 (stability and reactivity) of the SDS is of no use.



1. A risk assessment is necessary. Are there no significant risks a mixed storage is permitted.

2. Combustible substances, with the exception of flammable liquids, may be stored in storage areas in which there are no more than 50 full compressed-gas cylinders – of which a maximum of 25 of them contain flammable, oxidizing or toxic gases – provided the storage area for compressed-gas cylinders is separated by an at least two-metre high wall made of non-combustible building materials. Alternatively, there must be at least five-metres distance between the gas cylinders and the combustible substances.

3. Up to 150 compressed-gas containers containing flammable, oxidising and inert gases may be stored together. In addition 15 compressed-gas containers with toxic and highly toxic gases may be stored together with them at the same time.

4. Mixed storage is permitted if the following restrictions and quantities of all goods are adhered to:

1) These quantities apply only to the mixed storage of store class 4.1 B with store class 6.1 A.

5. Products that ignite easily or cause a fire to spread rapidly, such as packaging materials, must not be stored together with toxic substances or flammable liquids
6. Products which do not react with one another in the event of an incident may be stored together. This can be achieved by segregated storage, e.g. physical separation, large gaps between containers, separate containment basins, or storage in safety cabinets.
7. Mixed storage with non-combustible substances is permitted. For mixed storage with combustible substances see point 4.

The potential harm that may arise in the storage of chemicals depends not only on the quantities involved, but also on the particular hazards they pose. Uncontrolled storage is not permitted. The following requirements apply to all hazardous chemicals.

1. Safety instructions, which relate either to individual chemicals or to classes of chemicals with the same hazardous properties, need to be compiled.
2. Chemicals must be stored strictly according to the warehousing plan.
3. Workers must wear suitable protective clothing (overalls, safety shoes and as needed, also safety goggles and protective gloves) within the warehouse.
4. There must be a strict ban on naked flames, unshielded lights and smoking.
5. Stored goods must be handled in a way that prevents damage to packaging and the escape of chemicals.
6. Escape routes, emergency exits and access routes for the emergency services must be kept free at all times.
7. Suitable fire extinguishers (ABC powder extinguishers), first-aid boxes and eyewash bottles must be close at hand.
8. Written permission must be obtained before any welding is undertaken. The same applies to the use of power tools (for drilling, grinding, etc).
9. There must be a strict ban on smoking, eating and drinking in areas where chemicals are stored.

These regulations apply to storage rooms with a capacity of less than one tonne or to safety cabinets. The storage table for small quantities shows, by means of GHS-pictograms, combinations of products may be stored together (+) or not (-). There are no exceptions for explosive substances, gases, organic peroxides, self-reactive substances and radioactive substances; the mixed storage table (see above) still applies.

y Flammable liquids and aerosols y Substances liable to spontaneous combustion
 y Substances that form flammable gases in contact with water y Flammable solids

[illegible]

Example for a safety instruction see on the back side



Hazard state- ments



Hazard Statements			
H200	Unstable explosives.	H303 + H313 + H333	May be harmful if swallowed, in contact with skin or if inhaled.
H201	Explosive; mass explosion hazard.		
H202	Explosive; severe projection hazard.	H303 + H333	May be harmful if swallowed or if inhaled.
H203	Explosive; fire, blast or projection hazard.		
H204	Fire or projection hazard.	H304	May be fatal if swallowed and enters airways.
H205	May mass explode in fire.	H305	May be harmful if swallowed and enters airways.
H220	Extremely flammable gas.	H310	Fatal in contact with skin.
H221	Flammable gas.	H310 + H330	Fatal in contact with skin or if inhaled.
H222	Extremely flammable aerosol.	H311	Toxic in contact with skin.
H223	Flammable aerosol.	H311 + H331	Toxic in contact with skin or if inhaled.
H224	Extremely flammable liquid and vapour.	H312	Harmful in contact with skin.
H225	Highly flammable liquid and vapour.	H312 + H332	Harmful in contact with skin or if inhaled.
H226	Flammable liquid and vapour.	H313	May be harmful in contact with skin.
H227	Combustible liquid.	H313 + H333	May be harmful in contact with skin or if inhaled.
H228	Flammable solid.	H314	Causes severe skin burns and eye damage.
H229	Pressurised container: May burst if heated.	H315	Causes skin irritation.
H230	May react explosively even in the absence of air.	H315 + H320	Causes skin and eye irritation.
H231	May react explosively even in the absence of fire, elevated pressure and/or temperature.	H316	Causes mild skin irritation.
H240	Heating may cause an explosion.	H317	May cause an allergic skin reaction.
H241	Heating may cause a fire or explosion.	H318	Causes serious eye damage.
H242	Heating may cause a fire.	H319	Causes serious eye irritation.
H250	Catches fire spontaneously if exposed to air.	H320	Causes eye irritation.
H251	Self-heating: may catch fire.	H330	Fatal if inhaled.
H252	Self-heating in large quantities; may catch fire.	H331	Toxic if inhaled.
H260	In contact with water releases flammable gases which may ignite spontaneously.	H332	Harmful if inhaled.
H261	In contact with water releases flammable gases.	H333	May be harmful if inhaled.
H270	May cause or intensify fire; oxidiser.	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H271	May cause fire or explosion; strong oxidiser.	H335	May cause respiratory irritation.
H272	May intensify fire; oxidiser.	H336	May cause drowsiness or dizziness.
H280	Contains gas under pressure; may explode if heated.	H340	May cause genetic defects.
H281	Contains refrigerated gas; may cause cryogenic burns or injury.	H341	Suspected of causing genetic defects.
H290	May be corrosive to metals.	H350	May cause cancer.
H300	Fatal if swallowed.	H350i*	May cause cancer by inhalation.
H300 + H310	Fatal if swallowed or in contact with skin.	H351	Suspected of causing cancer.
H300 + H330	Fatal if swallowed or if inhaled.	H360	May damage fertility or the unborn child.
H300 + H310 + H330	Fatal if swallowed, in contact with skin or if inhaled.	H360D*	May damage the unborn child.
H301	Toxic if swallowed.	H360Df*	May damage the unborn child. Suspected of damaging fertility.
H301 + H311	Toxic if swallowed or in contact with skin.	H360F*	May damage fertility.
H301 + H331	Toxic if swallowed or if inhaled.	H360FD*	May damage fertility. May damage the unborn child.
H301 + H311 + H331	Toxic if swallowed, in contact with skin or if inhaled.	H360Fd*	May damage fertility. Suspected of damaging the unborn child.
H302	Harmful if swallowed.	H361	Suspected of damaging fertility or the unborn child.
H302 + H312	Harmful if swallowed or in contact with skin.	H361d*	Suspected of damaging the unborn child.
H302 + H332	Harmful if swallowed or if inhaled.	H361f*	Suspected of damaging fertility.
H302 + H312 + H332	Harmful if swallowed, in contact with skin or if inhaled.	H361fd*	Suspected of damaging fertility. Suspected of damaging the unborn child.
H303	May be harmful if swallowed.	H362	May cause harm to breast-fed children.
H303 + H313	May be harmful if swallowed or in contact with skin.	H370	Causes damage to organs.
		H371	May cause damage to organs.
		H372	Causes damage to organs through prolonged or repeated exposure.
		H373	May cause damage to organs through prolonged or repeated exposure.
		H400	Very toxic to aquatic life.
		H401	Toxic to aquatic life.
		H402	Harmful to aquatic life.
		H410	Very toxic to aquatic life with long lasting effects.
		H411	Toxic to aquatic life with long lasting effects.

Example for a safety instruction

SAFETY INSTRUCTIONS

Hazardous substances class, symbols and storage class

Flammable liquids

Storage class: 3

Protective measures and work practices

- The consumption of food and drink and smoking are forbidden in the storage area.
- Personal protective equipment must be used.
- Access by unauthorized personnel is forbidden.
- Keep emergency exits and inspection lanes free.
- Keep away from sources of ignition and use only explosion-proof equipment (for example forklifts).
- Read and observe the written instructions (e. g. SOP).
- Handle packaging with particular care.

Procedures in case of emergency

Fire:

1. Ensure that all personnel are evacuated to safety
2. Alert fire brigade
3. Fight fire with fire extinguisher, but do not take unnecessary risks
4. Use the escape route to go to the meeting point

Leakage or breakage:

Evacuate working area.
Alert the person responsible for evacuation and emergency response immediately.
Caution, risk of explosion!

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First aid

<p>Contact with skin or clothing:</p> <p>Remove contaminated clothing. Thoroughly rinse the skin immediately using the emergency shower.</p>	<p>Contact with eyes:</p> <p>Rinse the eye using the emergency eye wash. Continue rinsing with running water for several minutes holding eyelids open.</p>	<p>After inhalation:</p> <p>Move to fresh air.</p>
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Seek medical attention.

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Proper disposal

Uncleaned empty containers often contain explosive gas/air mixtures.

Dangerous waste only occurs in the storage area in the case of an accident or error. The materials must not reach earth ground- / or surface water. Because of this impede acceptable materials, as if this is possible in a harmful way. If they occur, use protective clothing to deal with them.