

Los Angeles County Certified Unified Program Agency Health Hazardous Materials Division



Separation of Incompatible Chemicals

This fact sheet summarizes options that can be used to separate incompatible chemicals. Hazardous waste regulations and the fire code require that incompatible materials be stored separately.

What does "incompatible" mean?

Chemical reactions occur when certain chemicals are mixed together. In uncontrolled circumstances (e.g. spills), chemicals that are not compatible with each other may react with one another and produce any of the following hazards:

- Heat or pressure
- Fire or explosion
- Violent reaction
- Toxic dusts, mists, fumes, or gases
- Flammable fumes or gases

Chemicals which, when mixed with each other, can react to produce these conditions are termed "incompatible." They must be stored separately in order to prevent uncontrolled chemical reactions.

Options that can be used to separate incompatibles may include:

- Distance separate by a distance of no less than 20 feet
- Partition isolate using partitions
 (Construction of partitions may require local building official approval prior to installation.)
- Cabinets

How to determine chemical compatibility

Chemicals can usually be grouped into generic hazard groups with the more common groups being flammable/combustible, acid, alkaline, oxidizer, and reactive. These groups are incompatible with each other and must be stored separately. For further reading, consult the following EPA guidance document. For further reading, please see the attached USEPA guidance.

The best way to determine incompatibility is to consult the Safety Data Sheet (SDS). Section I of the SDS will identify the chemical family and Section IV (Reactivity Data) will identify incompatible materials. Hazardous wastes may have undergone chemical changes in the process of becoming a waste. If the waste has not retained the same chemical properties as the material, consult the waste profile (for disposal) or a professional to help you determine which hazard group the waste belongs in.

Note: This fact sheet is intended for informational purposes only and may not encompass all the laws and regulations to this topic. More details may be found at Cal/EPA Department of Toxic Substance Control: www.dtsc.ca.gov. If further information is needed, call the County of Los Angeles CUPA at (323) 890-4045, or your local district office.

References

• Title 22 California Code of Regulations 66262.34(a)(1)

[•] Los Angeles Code of Ordinances, Title 32, 5003.9.8

EPA's Chemical Compatibility Chart EPA-600/2-80-076 April 1980

A METHOD FOR DETERMINING THE COMPATIBILITY OF CHEMICAL MIXTURES

Please Note: This chart is intended as an indication of some of the hazards that can be expected on mixing chemical wastes. Because of the differing activities of the thousands of compounds that may be encountered, it is not possible to make any chart definitive and all inclusive. It cannot be assumed to ensure compatibility of wastes because wastes are not classified as hazardous on the chart, nor do any blanks necessarily mean that the mixture cannot result in a hazard occurring. Detailed instructions as to hazards involved in handling

	g of any given waste should be obtain	ed fron	1 the ori	ginator	of the v	waste.																															
#	REACTIVITY GROUP NAME	1																																			
1	Acids, Mineral, Non-oxidizing	1	1										CODE				CO	ONSEQ	UEN	CE																	
2	Acids, Mineral, Oxidizing		2 G	7									H	He	t Gen	eration																					
3	Acids, Organic		H	3	_								F	Fir	•																						
4	Alcohols and Glycols	н	F	P	4								G	Inn	ocuou	s and non-f	amma	able gas	gene	ration																	
5	Aldehydes	H P	H F	H P		5							GT	To	ic Ga	s formation																					
6	Amides	н	H GT				6						GF	Fla	mmab	ole Gas form	ation																				
7	Amines, Aliphatic and Aromatic	н	H GT	н		н		7					E	Ex	losior	1																					
8	Azo Compounds, Diazo Compounds and Hydrazines	H G	H GT	H G	H G	н			8				P			olymerizatio	m																				
9	Carbamates	H G	H GT			- I''			G	9			s			ation of toxi		tonco																			
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10	Caustics	GT	GT	GT		П				G	10	L	U	Ma	y de h	azardous, b	ut Un	Known						_													
11	Cyanides	GF	GF H,F	GF H,GT	г	GF			G H			11																									
12	Dithiocarbamates			GF		GT		U	G				12																								
13	Esters	н	F H					1	G		н			13	7																						
14	Ethers	н	F												14	7																					
15	Fluorides, Inorganic	GT	GT	GT												15																					
16	Hydrocarbons, Aromatic		H F	L			1								1	16																					
17	Halogenated Organics	H GT	H,F GT					H GT	H G		H GF H	4	-	T			17																				
18	Isocyanates	Н	H,F GT	H G	H P			H P	H G		H,P F							18																			
19	Ketones	н	H F	Ī	Ť				H		н								19																		
20	Mercaptans and Other Organic Sulfides		H,F GT		1			1	H						1		u	н		20																	
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21					GF	GF	Н	Н	Н	Н	н н	1 6	F,H GT	н			E	н н		Н	21																
22	Metals, Other Elemental & Alloys as Powders, Vapors, or Sponges	H,F GF	H,F GF	G F					H,F GT	U	GF H						H E	GF H		H,F GF		22															
	Metals, Other Elemental & Alloys		H,F						H,F								н																				
23	as Sheets, Rods, Drops, etc. Metals and Metal Compounds,	GF	GF						G								F					23															
24	Toxic	S GF	S	S H	HE	GF	s	s		н	s	3F		GF			GF		F (GF			24	_													
25	Nitrides	HF	E	GF	GF	Н			U	G	U F		F H	Н			Н	U H		H E				25	7												
26	Nitriles	H,GT GF	GT	Н							U									F	1		s	GF H	26	7											
27	Nitro Compounds, Organic		H,F GT			н					H E										I,E SF			H,E GF		27											
28	Hydrocarbons, Aliphatic, Unsaturated	н	H F			н						T							П		H						28										
29	Hydrocarbons, Aliphatic, Saturated		H F																									29									
30	Peroxides and Hydroperoxides, Organic	H	H E		H	H G		H GT	H,F	H,F GT		I,E	ı,F GT				H	н		H,F F	H E G		H G	H,E GF	H,P GT		H P		30								
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32	Phosphothioates, Phosphodithioates	H GT	H GT						U		H E									,	4							u	ı	3	32						
33	Sulfides, Inorganic	GT	HF GF	GT		н			E			T						н	П									H	I ST		3	13					
34	Epoxides	H P	H P	H P	H P	U		H P	H P		H H P F	1	ı						ļ	H H	H H		H P	H P				H		U	H P	34	ı				
101	Combustible and Flammable Materials, Miscellaneous	H G	H,F GT	Ĺ				ĺ				Ĭ									1,F			H,F GF					I,F iT	Ť	Ī		101				
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103	Polymerizable Compounds	H	Н	H	н	н	H,F	H,F	H	H,F		I,E		н	н	н	Н	H,F H			1 H 1,F H		Н	H H,F	H,F		н н		I H	H,I				H	103 H,F		
104	Oxidizing Agents, Strong	GT H	H,F	GT H	F H,F	F H,F	GT H	GT H	E	GT	H	1	,F GT	F	F	F H,F	Н	GT F		GT E	E E	F		E		Н	F F	H	H	Η,	GT	· G	G H	Н	GT H,P	H,F	
105	Reducing Agents, Strong Water and Mixtures Containing	GF	GΤ	GF	GF	GF	GF	G			G	ST H	F			E	E			GF	1 н			н	GF	E		E		F GF	F GT	Н.	GF	E	GF E	E	10 GF
106	Water	н	н						G									G			F G	F	s	GF							GF			<u></u>			GT
107	Water Reactive Substances									<e< td=""><td>XTRE</td><td>MEL</td><td>REAC</td><td>TIVE</td><td>DO</td><td>NOT MIX</td><td>WITH</td><td>HANY</td><td>CHE</td><td>MICA</td><td>L OR</td><td>WAST</td><td>E M</td><td>ATER</td><td>IAL!</td><td>EXT</td><td>REME</td><td>LY R</td><td>EACT</td><td>IVE!</td><td>></td><td></td><td></td><td></td><td></td><td></td><td></td></e<>	XTRE	MEL	REAC	TIVE	DO	NOT MIX	WITH	HANY	CHE	MICA	L OR	WAST	E M	ATER	IAL!	EXT	REME	LY R	EACT	IVE!	>						