

Pourquoi utiliser ce

Why use this laboratory notebook ?

TABLE 6. PAIRS OF MISCIBLE SOLVENTS

Acetic acid: with chloroform, ethanol, ethyl acetate, methyl cyanide, petroleum ether, or water.
Acetone: with benzene, butyl alcohol, carbon tetrachloride, chloroform, cyclohexane, ethanol, ethyl acetate, methyl cyanide, petroleum ether or water.
Ammonia: with ethanol, methanol, pyridine.
Aniline: with acetone, benzene, carbon tetrachloride, ethyl ether, <i>n</i> -heptane, methanol, methyl cyanide or nitrobenzene.
Benzene: with acetone, butyl alcohol, carbon tetrachloride, chloroform, cyclohexane, ethanol, methyl cyanide, petroleum ether or pyridine.
Butyl alcohol: with acetone or ethyl acetate.
Carbon disulphide: with petroleum ether.
Carbon tetrachloride: with cyclohexane.
Chloroform: with acetic acid, acetone, benzene, ethanol, ethyl acetate, hexane, methanol or pyridine.
Cyclohexane: with acetone, benzene, carbon tetrachloride, ethanol or ethyl ether.
Dimethyl formamide: with benzene, ethanol or ether.
Dimethyl sulphoxide: with acetone, benzene, chloroform, ethanol, ethyl ether or water.
Dioxane: with benzene, carbon tetrachloride, chloroform, ethanol, ethyl ether, petroleum ether, pyridine or water.
Ethanol: with acetic acid, acetone, benzene, chloroform, cyclohexane, dioxane, ethyl ether, pentane, toluene, water or xylene.
Ethyl acetate: with acetic acid, acetone, butyl alcohol, chloroform, or methanol.
Ethyl ether: with acetone, cyclohexane, ethanol, methanol, methylal, methyl cyanide, pentane or petroleum ether.
Glycerol: with ethanol, methanol or water.
Hexane: with benzene, chloroform or ethanol.
Methanol: with chloroform, ethyl ether, glycerol or water.
Methylal: with ethyl ether.
Methyl ethyl ketone: with acetic acid, benzene, ethanol or methanol.
Nitrobenzene: with aniline, methanol or methyl cyanide.
Pentane: with ethanol or ethyl ether.
Petroleum ether: with acetic acid, acetone, benzene, carbon disulphide or ethyl ether.
Phenol: with carbon tetrachloride, ethanol, ethyl ether or xylene.
Pyridine: with acetone, ammonia, benzene, chloroform, dioxane, petroleum ether, toluene or water.
Toluene: with ethanol, ethyl ether or pyridine.
Water: with acetic acid, acetone, ethanol, methanol, or pyridine.
Xylene: with ethanol or phenol.

E 18. SOME COMMON IMMISCIBLE OR SLIGHTLY MISCIBLE PAIRS OF SOLVENTS

Carbon tetrachloride with ethanalamine, ethylene glycol, formamide or water.
Dimethyl formamide with cyclohexane or petroleum ether.
Dimethyl sulphoxide with cyclohexane or petroleum ether.
Ethyl ether with ethanalamine, ethylene glycol or water.
Methanol with carbon disulphide, cyclohexane or petroleum ether.
Petroleum ether with aniline, benzyl alcohol, dimethyl formamide, dimethyl sulphoxide, formamide, furfuryl alcohol, phenol or water.
Water with aniline, benzene, benzyl alcohol, carbon disulphide, carbon tetrachloride, chloroform, cyclohexane, cyclohexanone, ethyl acetate, isoamyl alcohol, methyl ethyl ketone, nitromethane, tributyl phosphate or toluene.

TABLE 7. MATERIALS FOR COOLING BATHS

Temperature	Composition
0°	Crushed ice
-5° to -20°	Ice-salt mixtures
-35°	Liquid ammonia
-40° to -50°	Ice (3.5-4 parts) - CaCl ₂ 6H ₂ O (2 parts)
-72°	Solid CO ₂ with ethanol
-77°	Solid CO ₂ with chloroform or acetone
-78°	Solid CO ₂ (powdered)
-100°	Solid CO ₂ with ethyl ether
-192°	liquid air
-196°	liquid nitrogen

Iteratively, the following liquids can be used, partially frozen, as cryostats, by adding solid CO₂ bit by bit to the material in a Dewar-type container and stirring to make a slush:

13°	<i>p</i> -Xylene
17°	Dioxane
6°	Cyclohexane
5°	Benzene
2°	Formamide
-8.6°	Methyl sulfolate
-9°	Hexane-2,5-dione
-10.5°	Ethylene glycol
-11.9°	<i>tert</i> -Amyl alcohol
-15°	Cyclohexane or methyl benzoate
-16.3°	Benzyl alcohol
-18°	<i>n</i> -Octanol
-22.6°	1,2-Dichlorobenzene
-22.8°	Tetrachloroethylene
-24.5°	Butyl benzoate
-25°	Carbon tetrachloride
-25°	Diethyl sulphate
-29°	<i>o</i> -Xylene or pentachloroethane
-30°	Bromobenzene
-32°	<i>n</i> -Toluidine
-32.6°	Dipropyl ketone
-38°	Toluene
-41°	Methyl cyanide
-42°	Pyridine or diethyl ketone
-44°	Cyclohexyl chloride
-45°	Chlorobenzene
-47°	<i>m</i> -Xylene
-50°	Ethyl malonate or <i>n</i> -butylamine

TABLE 5.

Acetic acid (118°)	Ethyl acetate (78°)
(glacial)	Ethyl benzoate (98°/19mm)
Acetone (56°)	Ethylene glycol (68°/4mm)
Acetylacetone (139°)	Formamide (110°/10mm)
Benzene (80°)	Glycerol (126°/11mm)
Benzyl alcohol (93°/10mm)	Isoamyl alcohol (131°)
<i>n</i> -Butanol (118°)	Methanol (64.5°)
Butyl acetate (126.5°)	Methyl cyanide (82°)
<i>n</i> -Butyl ether (142°)	Methylene chloride (41°)
γ -Butyrolactone (206°)	Methyl ethyl ketone (80°)
Carbon tetrachloride (77°)	Methyl isobutyl ketone (116°)
Cellosolve (135°)	Nitrobenzene (210°)
Chlorobenzene (132°)	Nitromethane (101°)
Chloroform (61°)	Petroleum ether (various)
Cyclohexane (81°)	Pyridine (115.5°)
Diethyl cellosolve (121°)	Pyridine trihydrate (93°)
Diethyl ether (34.5°)	Tetrahydrofuran (64-66°)
Dimethyl formamide (76°/39mm)	Toluene (110°)
Dioxane (101°)	Trimethylene glycol (59°/11mm)
Ethanol (78°)	Water (100°)

Highly flammable, should be heated or evaporated on steam or electrically heated water baths only (preferably in a nitrogen atmosphere).

For other organic materials used in low temperature slush-baths with liquid Nitrogen, see Table 11 (13, 1964). NOTE: The liquid nitrogen should be used only if it has been in contact with air will contain oxygen (see Table 8 for boiling points).

Use high quality pure nitrogen, do not use liquid air or liquid nitrogen directly for a long period (due to the absorption of oxygen in it) which could be dangerous matter. If the quality of the liquid nitrogen is not known, or is un-
certified, it should be used with caution.