

DESCRIPTION OF HEAVY LIQUIDS*

Name	<i>Thoulet solution</i>	<i>Di-iodomethane (methylene iodide)</i>	<i>Klein solution</i>	<i>Rohrbach solution</i>	<i>Clerici solution</i>
Maximum specific gravity	3.19	3.32 at 20°C	3.55	3.59	4.28 at 20°C 4.76 at 90°C
Miscible with	Water	Acetone, alcohol, NN-dimethylformamide	Water	Water with difficulty	Water
Composition	Aq. soln of mercuric potassium iodide	CH ₂ I ₂	Aq. soln of cadmiumborotungstate	Aq. soln of barium mercuric iodide	Aq. soln of thallium formate and malonate
Preparation	Reasonably simple	Ex lab. stock	Complex	Reasonably simple	Simple
Concentrated by	Evaporation	Water washing, air sparging, distillation	Evaporation	Evaporation	Evaporation
Toxicity hazard by contact	Very corrosive	Moderate	Low	High	High
Toxicity hazard by vapour inhalation	Low	Moderate	Low	Low	Moderate
Decomposed by	Rubber, metal	Heat, sulfur	Carbonate, lead, zinc, iron	Metals	
Acts on filter paper	Yes	No	No	Yes	No
Disadvantages	Deteriorates with use		Oily, rarely available	Hygroscopic	Toxicity

Name	<i>Clerici solution</i>	<i>Bromoform</i>	<i>Tetrabromoethane (TBE) (acetylene tetrabromide)</i>	<i>LST heavy liquid</i>	<i>Sodium polytungstate</i>
Maximum specific gravity	4.28 at 20°C 4.76 at 90°C	2.89 at 20°C	2.96 at 20°C	2.95 at 25°C 3.6 at 87°C	3.1 at 25°C
Miscible with	Water	Acetone, alcohol, NN-dimethylformamide	Acetone, alcohol, NN-dimethylformamide	Water	Water
Composition	Aq. soln of thallium formate and malonate	CHBr ₃	CHBr ₂ .CHBr ₂	Aq. soln of lithium heteropolytungstates	Aq. soln of 3Na ₂ WO ₄ .9WO ₃ .H ₂ O
Preparation	Simple	Ex lab. stock	Ex lab. stock, available in bulk	Ex lab. stock	Simple
Concentrated by	Evaporation	Water washing, air sparging, distillation	Water washing, air sparging, distillation	Evaporation	Evaporation
Toxicity hazard by contact	High	Low	Low	Very low	Very low
Toxicity hazard by vapour inhalation	Moderate	High	High	Very low	Very low
Decomposed by		Heat, sulfur	Heat	Metals, calcium ions	Metals, calcium ions
Acts on filter paper	No	No	No	No	No
Disadvantages	Toxicity		More viscous than bromoform		More viscous than TBE and LST

* Taken from Chapter 3, Field Geologists' Manul, fifth edition (The Australasian Institute of Mining and Metallurgy: Melbourne).