



Hydrazine Hydrate



Hydrazine hydrate is a colorless liquid with an odor similar to that of ammonia. Hydrazine is widely used in various applications such as the deoxygenation of boiler water, preparation of chemical blowing agents, preparation of intermediates for pharmaceutical and agricultural chemicals, reducing agent for metals and halogens and chain extension of aqueous urethane formulations. There are two nomenclatures for hydrazine solutions, thus 100% hydrazine hydrate contains 64% hydrazine by weight. Hydrazine hydrate is miscible with water and lower alcohols. Typical properties and specifications for standard solutions offered by Arch are given in Tables 1 and 2. Arch also offers catalyzed hydrazine solutions for boiler water treatment. A summary of the compatibility of various materials of construction for use with hydrazine is shown in Table 3.

Table 1 Specifications

Hydrazine Solution	15.5%	22.4%	35%	51.2%	54.4%	64%
Hydrazine Hydrate	24.2%	35.0%	54.7%	80%	85%	100%
N ₂ H ₄ Content (% by wt)	15.5-16.0	21.4-23.4	35.0-35.7	51.2-51.8	54.4-55.1	64.0-64.8
N ₂ H ₄ •H ₂ O (% by wt)	24.2	33.4-36.6	54.7-55.8	80-80.9	85-86.1	100
Iron, Fe (ppm)	2	2	2	3	3	3
Sodium, Na (ppm)	3	3	3	4	4	4
Chloride, Cl (ppm)	2	2	2	3	3	3
Fluoride, F (ppm)	1	1	1	1	1	1
Sulfate, SO ₄ (ppm)	1	1	1	1	1	1

NOTE: Heavy metals typically less than 5 ppm. Analysis on special request.

Table 2 Physical Properties

Hydrazine Solution	15.5%	22.4%	35%	51.2%	54.4%	64%
Hydrazine Hydrate	24.2%	35.0%	54.7%	80%	85%	100%
Specific gravity @ 25°C	1.008	1.012	1.019	1.028	1.031	1.032
Lbs./Gallon @ 25°C	8.378	8.411	8.470	8.545	8.570	8.578
Boiling point (°C)	105	107	109.5	119	119.8	120.1
Flash point, COC (°C)	none	none	none	93	89	72
Freezing point (°C)	-15	-25	-65	-57	-57	-51



Table 3 Materials of Construction

	Concentration				
Hydrazine Solution	Less than 22.4%	35% ^a	51.2%	54.4%	64%
Hydrazine Hydrate	Less than 35.0%	54.7%	80%	85%	100%
Stainless Steel					
304L	S	S	S	S	S
347	S	S	S	S	S
316	Sb	Sb	Sb	Sb	Sb
Cold Rolled Steel	S	NR	NR	NR	NR
Copper	NS	NS	NS	NS	NS
Brass	NS	NS	NS	NS	NS
Teflonc	S	S	S	S	S
Polyethylene	S	S	S	S	S
Aluminum	NS	NS	NS	NS	NS

^aScav-Ox, Scav-Ox II and Scav-Ox Plus are 35% hydrazine solutions

^b Up to 65°C (150°F)

^c Trademark of E.I. duPont de Nemours, Inc.

S-Generally Satisfactory

NS-Not Suitable (due either to decomposition of the hydrazine or to adverse effects of the solution on the material of construction)

NR-Not Recommended

Shipping Information

Hydrazine solutions are available from Arch in the following containers: All concentrations: tank trucks, 350-gal returnable SS tote bin, 180-gal returnable SS tote bin, 55-gal non-returnable plastic *E-Z Drum*TM container, 55-gallon, 30 gallon and 6.5 gallon non-returnable plastic drum.

How To Order

To place an order for delivery in the U.S. or inter-nationally or for further information, call 1-800-654-6018.

Please refer to the Material Safety Data Sheet (MSDS) for complete information on Storage and Handling, Toxicological Properties, Personal Protection, First Aid, Spill and Leak Procedures, and Waste Disposal. To order an MSDS, call the MSDS Control Group at 1-800-511-MSDS. Before using or handling this product, the MSDS should be thoroughly reviewed.

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