

Phenol



Introduction

Phenol, which is also referred to as carboic acid, Phenylic acid, benzophenol, hydroxybenzo and mono-hydroxy benzene, is used to produce a wide variety of chemical intermediates, including phenolic resins, bisphenol A, caprolactam, alkyl phenols, adipic acid, plasticizers and others.

Phenol can be shipped in water solutions to eliminate molten storage.

Specification1 : Phenol for phenolic resin production*Purity=100-(Total GC impurities + Water)

Characteristics	Sales Specifications
Molten Color, Pt/Co	20max
Water, wt. %	0.1max
Solidification Point, °C	40.7min.
Water solubility @25°C	Clear
Purity*, wt. %	99.7min.

Specification2 : High purity phenol for PC grade Bisphenol A production

Characteristics	Sales Specifications
Molten Color, Pt/Co	10max
Water, wt. %	0.03max
Total GC impurity, wt.ppm	50max
Iron content, wt.ppm	0.1max

Typical Properties

Empirical formula	C ₆ H ₅ OH		Critical pressure, atm	60.5	
Molecular weight	94.11		Solubility	Water 16°C(61°F)	6.7g/100ml
Appearance	White crystalline(at room temperature)			66°C(151°F)	all
Deliquescent	Yes			Alcohol	all
Dielectric constant, @48°C	9.9		Solubility, water in phenol@20°C	28 wt.%	
Light sensitive	Yes, darkens slowly on exposure to light		Surface tension	at melting point(Dynes/cm)	37.9
Odor	Characteristically sweet			Threshold limit value, 8hours	5ppm or 19mg/m ³
Odor threshold	0.05~0.5ppm		Vapor pressure,(mbar)	25°C	0.29
Physical state	Liquid or solid			50°C	3.5
Reactivity	Stable			100°C	54
Density	25°C	1.071kg/l		160°C	530
	50°C	1.050kg/l	45°C	3.8	
Specific gravity @25/25°C	1% aqueous solution	1.0009	Viscosity,(centistokes)	60°C	2.47
	2% aqueous solution	1.0025		80°C	1.56
	5% aqueous solution	1.0044		100°C	1.09
Specific gravity	Solid at 25/4°C	1.071			
	Liquid at 41/4°C	1.058			
	Liquid at 50/4°C	1.049			
	Liquid at 60/4°C	1.041			
Autoignition temperature	715°C(1319°F)				
Boiling point, @760mHg	181.8°C(359°F)				
Coefficient of expansion	0.00085 per °C(approximate)				
Explosive limit in air, lower	1.5% v/v				
Flash point	Tag open cup	85°C(185°F)			
	Closed cup	79°C(174°F)			
Freezing point	40.8°C(105°F)				
Heat of combustion	(cal/g)	-7,754			
	(Btu/lb)	-13,957			
Heat of Fusion	(cal/g)	29.22			
	(Btu/lb)	52.6			
Heat of Vaporization at b.p.	(cal/g)	116.6			
	(Btu/lb)	210			
Specific heat,(cal/g °C)	Solid at 4°C	0.306			
	Solid at 22.7°C	0.338			
	Liquid at 70~74°C	0.548			