Figure 14

164758
598

14700

PHYSICAL CONSTANTS DATA

SUBSTANCE	STRUCTURAL FORMULA
BENZENE, NITRATION GRADE BENZOL	

COMPILED BY	Reviewed by	DATE	
P. N. Biven 6/57	W.D.Robinson	8-26-57	Beil ed 4, V-179

NAME Revised 3/14/68 MHT		SOURCE & DATE
Formula	C_6H_6	Ref. 2
Molecular Weight	78.11	Ref. 2
Appearance	Water white liquid	Ref. 2
Boiling Point at 760 mm	80.1°C	Ref. 1,2
Boiling Point at mm		
Boiling Point at mm		
Boiling Point at mm		
Crystallizing Point		
Melting Point	5.5°C	Ref. 1:2
Solution Point		
Specific Gravity @ 20°C	0.88	Ref. 1
Specific Gravity @ 20/4°C	0.879	Ref. 2
Pounds per Gal. @ 15.5°C	7.35	Ref. 3
Coefficient of Expansion (10 - 30°C)	0.00122	Ref. 3
Refractive Index @ n_D^{20} °C	1.50142	Ref. 3
Infra Red Spectrum (Reference)		
Ultra Violet Spectrum (Reference)		
Viscosity @ 25°C (Specific)	1.0	Ref.
Viscosity @		
Surface Tension @ 23.5°C	27.3 dynes/cm	Ref. 5
Solubility in Water 22°C	0.07: 0.082 gram/100ml	Ref. 2:3
Solubility in Alcohol, Abs.	00	Ref. 2
Solubility in Ether	00	Ref. 2
Autoignition Point	538°C	Ref. 1
Vapor Density (air = 1)	2.73	Ref. 1
Explosive limits (% vol. in air)	1.5-8.0	Ref. 1
Flashpoint Tag Open Cup	20°F	Ref. 3
Flash Point °F (Method) Closed Cup	-11.1°C	Ref. 1
Fire Point °C		
Heat of Combustion	18,030 BTU/#	Ref. 2
Heat of Formation (Liquid)	268 BTU/# @25°C	Ref. 2
Thermal Stability (cal./kg/min.)		
Latent Heat of Fusion	54.2 BTU/#	Ref. 2
Latent Heat of Vap. 80.1°C	94.14 Cal/gm 169 BTU/#	"
Specific Heat 20°C	0.406 Cal/gm °C	"
Critical Temperature	288.5°C	Ref. 2
Critical Pressure	47.91 Atmospheres	Ref. 2
Dissociation Constant		
cp/cr @90°C and 1 atm	1.10 (for vapor)	Ref. 2
ELECTRICAL CONDUCTIVITY	3×10^{-9} MHOS OR 0.0034 MHOS	REF. 6.

Other Constants

Ref. 1 - MCA Safety Data Sheet SD-33 1948
Ref. 2 - Lange's Handbook ed 9, 1956
Ref. 3 - Barrett Data Page 1957
Ref. 4 - Sax "Handbook of Dangerous Materials"
Ref. 5 - Data Published by Commercial Solvents Corp. 1942
REF. 6 ORG. RES. LAB. P.V. SPECTR. DATA 12/5/66

Toxicity (Give Reference)	See	Ref. 1

Maximum allowable concn. in air: 100 ppm; acute poisoning above 3000 ppm Ref. 4

TRADE SECRETS