Technical Information

INVISTA™

Adi-*pure*® Adipic Acid

$HOOC(CH_2)_4COOH$

Product Description

Adi-*pure*® is a crystalline, white powder used to make a variety of polymer and nonpolymer products serving many end uses.

Adi-*pure*® Adipic Acid is **not** sold for use as a direct food ingredient.

Applications

- Adhesives: urethane, polyester and polyamide
- Coatings: alkyd, urethane, gel coat, and polyester
- Nylon 6/6 fibers, engineering resins, films and monofilaments
- pH buffering in water soluble polymers and in flue gas desulfurization
- Ester plasticizers: monomeric and polymeric
- Synthetic ester lubricants and hydraulic fluids
- Textile treatments
- Urethane foams, elastomers and fibers
- Unsaturated polyester resins
- Wet strength paper resins: polyamide-epichlorohydrin type
- Copolyamide adhesives, resins, films and binders
- Intermediate in the production of adiponitrile, cyclopentanone, dimethyl sebacate and adipic polyanhydride
- Personal care emollients

Specifications

Assay, wt%, min.	99.7
Water, wt%, max.	0.20
Ash, ppm, max.	2.0
Iron, as Fe, ppm, max.	0.5
Methanol Solution Color (APHA), max.	4
Total Nitrogen (TN) mpm (moles per million moles), max.	15

General Information

CAS Name		Hexanedioic acid
CAS Number		124-04-9
Formula		$C_6H_{10}O_4$
Other Names		1,4-Butanedicarboxylic acid
Molecular Weight		146.14
Melting Point, °C (°F)		152–153 (306–307)
Density, g/cc		
solid		1.360
liquid, 163°C (325°F)		1.093
Bulk Density, loose, lb/ft^3		40–45
Melt Viscosity, cP		
160°C (320°F)		4.54
193°C (379°F)		2.64
Specific Heat	**cal/g°C**	**kJ/kg°K**
solid	0.38	1.59
liquid	0.54	2.26
Heats of	**cal/g**	**kJ/kg**
Formation	–1630	–6500
Fusion	57	239
Vaporization	134	560
Sublimation, 25°C (77°F)	211	882
Combustion	4580	19,200
Crystallization (water)	64	265
Solution (water)		
10–20°C (50–68°F)	–51	–214
90–100°C (194–212°F)	–58	–241

Nonhygroscopic at 27°C (81°F) and 85% relative humidity

Flash Point (TCC), °C (°F)	196 (385)
Crystal	Monoclinic needles

Ionization Constants, 25°C (77°F)

K1	3.71 × 10–5	pKa1	4.43
K2	3.87 × 10–6	pKa2	5.41

Acidity of aqueous solutions, 25°C (77°F)

wt%	0.1	0.2	0.4	0.6	1.2	2.5
pH	3.2	3.1	3.0	2.9	2.8	2.7

Vapor Pressure

Temperature, °C (°F)	mmHg	kPa
159.5 (319.1)	1	0.13
205.5 (401.9)	10	1.3
240.5 (464.9)	40	5.3
265.0 (509.0)	100	13.3
312.5 (594.5)	400	53.3
337.5 (639.5)	760 101	

* With decomposition

Shipping Information

Bulk	Net Weight
Pressure Differential (PD) Trailer:	47,000 lb
Shipping Points:	Elizabeth, NJ
	Carnegie, PA
	Highlands, TX

Packages

Bulk Bags:	2,000 lb
	500, 900, 1,000 kg
Paper Bags:	50 lb
	25 Kg
Shipping Point:	Highlands, TX
	Pointe Claire, Quebec, Canada
	Scarborough, Ontario, Canada

Pallet Dimensions/Weight

	L x W x H (in)	Gross/Net (lb)
50 bags	48 x 42 x 60	2,580/2,500
Bulk Bags	38 x 40 x 47	2,090/2,000

If packages contain less than 5,000 lb, shipping description is ***not*** regulated by DOT/IMO. If package contains 5,000 lb or more:

Proper Shipping Name

Environmentally Hazardous Substance, Solid, N.O.S. (Adipic Acid)

UN Number:	3077
DOT Hazard Class:	9
Freight Classification:	Adipic Acid
Packaging Group:	III
Harmonized Schedule No.:	2917.12.10002

For Samples and Information:

INVISTA™ Specialty Intermediates • (800) 231-0998

www.intermediates.invista.com