

ADIPIC ACID

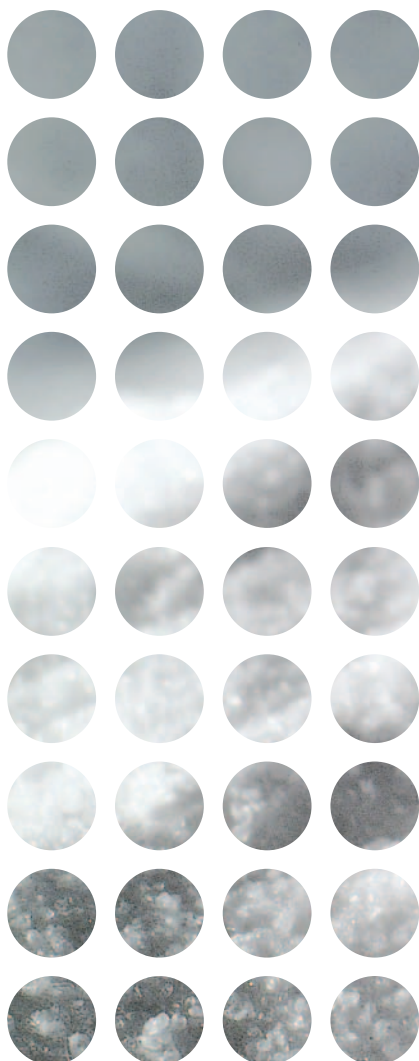


INTRODUCTION

Adipic acid is a key raw material for a broad range of applications in the plastics and textile industries. Radici Chimica's state-of-the-art technology produces adipic acid with a high degree of purity, ensuring optimal performance for each and every application.

APPLICATIONS

Adipic acid is a chemical intermediate mainly used in the manufacture of polyamide 66 and is, therefore, a fundamental building block for a wide variety of products in the plastics and textile industries. Other uses include polyester resins, fibres, polyurethane, plasticizers, lubricants and specialised end uses.



HANDLING AND STORAGE

Crystalline adipic acid tends to form conglomerates. The parameters that can affect conglomerate formation include not only the time of storage but also humidity, temperature and particle size. It is recommended that molten adipic acid should be kept and transported in a nitrogen atmosphere. The main risk in handling adipic acid is the danger of explosion. Adipic acid dust, suspended in the air, can ignite at temperatures of 500-550°C. According to the Bureau of Mines (USA), adipic acid dust has an explosion severity index of 1.9 and relative explosion hazard rating of strong. Crystalline adipic acid should be stored under ni-

trogen cover, or under a mix of nitrogen and air with an oxygen content of less than 10%. During pneumatic conveying of adipic acid, both nitrogen and air can be used. However, in the latter case, precautions must be taken to avoid the risk of ignition of the dust. In particular, the conveying equipment must have explosion vents in order to dissipate the force of any possible explosion, and all equipment must be carefully earthed to prevent static charges. Solid adipic acid and its aqueous solutions attack mild steel even at room temperature but do not greatly affect stainless steel and aluminium.

ADIPIC ACID



ADIPIC ACID TECHNICAL DATA

Formula: C₆H₁₀O₄
Molecular weight: 146.146

<i>Properties:</i>	<i>Units</i>	<i>Value</i>
● Appearance	-	Odourless, white, crystalline solid
● Solubility in water (25°C)	%	2.5
● Density (solid at 25°C)	g/cm ³	1360
● Density (liquid at 165°C)	g/cm ³	1085
● pH (2.5% wt in water at 25°C)	-	2.7

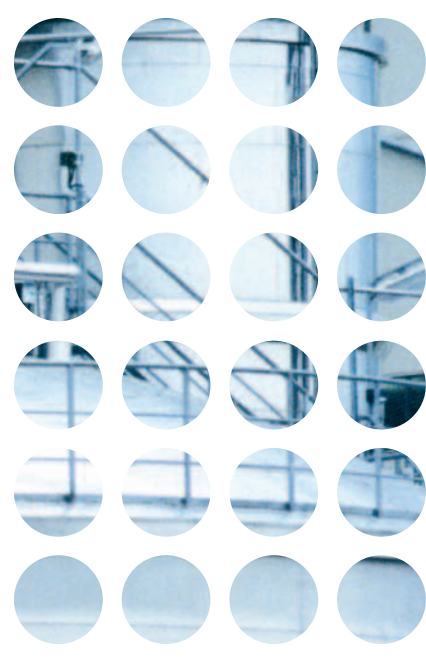
<i>Specifications:</i>	<i>Units</i>	<i>Value</i>	<i>Analysis method</i>
● Total nitrogen (as nitric acid)	ppm	20 max	MA0065
● Ashes	ppm	5 max	MA0064
● Colour (methanolic solution)	HAZEN	5 max	MA0051
● Melt colour	APHA	10 max	MA0067
● Iron	ppm	0.2 max	MA0226
● Crystallization point	°C	152 ± 0.5	MA0069
● Water	%	0.2 max	MA0052
● Assay	%	99.8 min	MA0052

Methods of analysis are available on request

SAFETY DATA

Personal Protection:

● Eye protection	Safety glasses impervious to dust
● Hand protection	Protective gloves
● Respiratory protection	Anti-dust mask
● Protective clothing	Anti-dust overalls, visor with hood





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