



HA project product manual

New Materials Business Unit of NHU



Zhejiang NHU Co., Ltd.

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Company profile

Zhejiang NHU Co., Ltd.

Zhejiang NHU Co., Ltd. (abbreviated as NHU) was founded in 1999 and listed in 2004 with the stock code of 002001. Since the inception, NHU has been firmly holding on to the belief of developing through innovation and thriving in competition. Specialized in functional chemicals with an emphasis on nutritional chemicals, aroma chemicals and polymers, NHU devotes itself in the stages of R&D, production, sales, and service of the products. NHU offers integrated solutions to customers across over 100 countries and regions in a wide range of domains including nutrition & health, personal and home care, transportation, environmental protection, and new energy. Leveraging our quality, healthy, green, and low-carbon products, we are committed to improving quality of life for all and generating lasting values for stakeholders. Currently ranked among China's top 100 fine chemical companies and top 100 listed companies, NHU is doubling its effort to rise to the top of the world's functional chemical industry.

HONOR: No. 2 in China's Top 100 Fine Chemicals;
Top 100 listed companies in China;
No. 1 in China's Top 10 light industrial spices industry;
National "specialized special new small giant" enterprise, etc.



Shandong NHU Fine Chemical Science and Technology Co., Ltd.

Shandong NHU Fine Chemical Science and Technology Co., Ltd., founded in 2017, is a wholly owned subsidiary of Zhejiang NHU Co., Ltd., located in the Binhai Economic Technology Development Zone, Weifang, Shandong Province. Shandong base of NHU covers over 6 million square meters, and the main product-lines are nutrition, special isocyanates, special amines and other chemical raw materials, with 10,000 tons of special isocyanates (HDI, IPDI) and 20,000 tons of special amines (IPDA) production line, the products are widely used in wind power blades, automotive coatings, industrial protective coatings, leather, shoe material, furniture protection and other fields.

Product catalogue



Isophorone Diamine
Abbreviation: IPDA

Isophorone Diisocyanate
Abbreviation: IPDI

Hexamethylene-1,6-diisocyanate
Abbreviation: HDI

1,6-Hexamethylene Diisocyanate Based Polyisocyanate,
Product brand: NT 3300、NT 3600
Abbreviation: HDI polymer

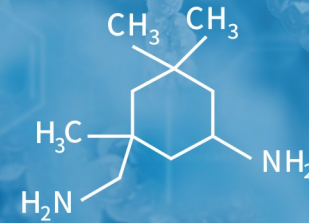
Solution of 1,6-Hexamethylene Diisocyanate Based
Polyisocyanate, Product brand: NT 3390B/S、NT 3390B
Abbreviation: HDI trimer solution

1,6-Hexamethylene Diisocyanate Based Biuret Polyisocyanate,
Product brand: NT 100
Abbreviation: HDI biuret

Solution of 1,6-Hexamethylene Diisocyanate Based Biuret Polyisocyanate,
Product brand: NT 75M/X、NT 75B
Abbreviation: HDI biuret solution

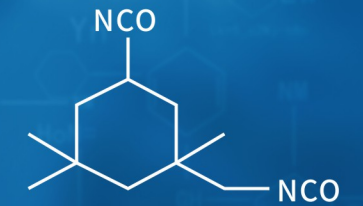
01 | Isophorone Diamine (NHUAMINE™IPDA)

Product description: Isophorone diamine, abbreviated as IPDA, is an alicyclic diamine with the formula $C_{10}H_{22}N_2$, which is a colorless or yellowish liquid with a slight odor of ammonia.



02 | Isophorone Diisocyanate (NHUNATE™IPDI)

Product description: Isophorone diisocyanate, abbreviated as IPDI, chemical formula $C_{12}H_{18}N_2O_2$, is an alicyclic diisocyanate, colorless or slight yellow, low viscosity liquid at room temperature, with special odor.



| Application scenario

Power blades, wind power structural adhesive, epoxy floor, adhesives and other composite materials.

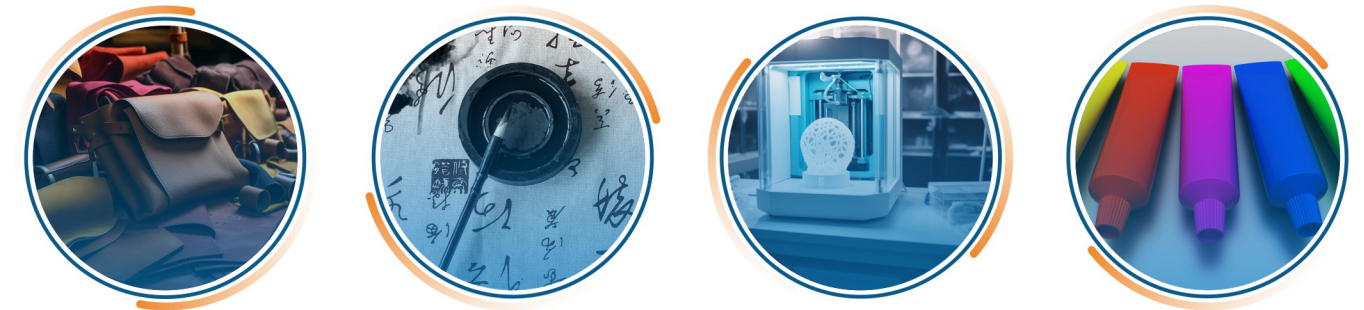


| Product Standards

Test Item	Standards
Appearance	Colorless transparent liquid
Colour value	≤15
Isophorone diamine (GC) /%	≥99.7
sec/tert Amino compounds (GC) /%	≤0.15
Aminonitriles (GC) /%	≤0.15
Water-content/%	≤0.20

| Application scenario

Leather, inks, adhesives, 3D printing, high-end coatings, fan blades and other fields.



| Product Standards

Test Item	Standards
Appearance	Clear transparent liquid
Purity/%	≥99.50
NCO Content/%	≥37.50
Colour value	≤30
Hydrolyzed chlorine content/(mg/kg)	≤150
Total chlorine content/(mg/kg)	≤200

03 | Hexamethylene-1,6-diisocyanate (NHUNATE™HDI)

Product description: Hexamethylene-1,6-diisocyanate, abbreviated as HDI, molecular formula $C_8H_{12}N_2O_2$, is an organic compound, and colorless or yellowish liquid, with unpleasant odor, is stable at room temperature, with active chemical properties.



| Application scenario

Coatings, aviation, textile, foam, rubber industry and other fields.



| Product Standards

Test Item	Standards
Appearance	Clear transparent liquid
Purity/%	≥99.50
NCO Content/%	≥49.70
Colour value	≤30
Hydrolyzed chlorine content/(mg/kg)	≤100

04 | HDI polymer (NHUNATE™NT series)

Product description: 1,6-Hexamethylene Diisocyanate Based Polyisocyanate, is colorless or slight yellow liquid at room temperature.

| Application scenario

Automotive OEM paint, industrial machinery protective paint, marine paint, wood paint and other fields.



| Product Standards

Product description	product grade	solvent	Non-volatile content/%	NCO Content/%	Viscosity (23°C)/ mPa·s	Colour value (pt-co)	Monomeric HDI/%
1,6Hexamethylene Diisocyanate Based Polyisocyanate	NT 3300	/	100	21.5~22.1	2250~3750	≤40	≤0.10
	NT 3600	/	100	22.5~23.5	900~1500	≤40	≤0.10
Solution of 1,6 Hexamethylene Diisocyanate Based Polyisocyanate	NT 3390B/S	n-butyl acetate/ Naphtha number 100	90	19.3~19.9	400~700	≤40	≤0.10
	NT 3390B	n-butyl acetate	90	19.3~19.9	350~650	≤40	≤0.10
1,6-Hexamethylene Diisocyanate Based Biuret Polyisocyanate	NT 100	/	100	21.7~22.3	8000~12000	≤80	≤0.50
Solution of 1,6-Hexamethylene Diisocyanate Based Biuret Polyisocyanate	NT 75M/X	Propylene glycol 1-methyl ether 2-acetate /xylene	75	16.2~16.8	175~325	≤40	<0.50
	NT 75B	n-butyl acetate	75	16.2~16.8	110~210	≤40	<0.50