



DOW Triisopropanolamine (TIPA)

TIPA 99, TIPA Low Freeze Grade (LFG) & TIPA 101

Product Description

DOW Triisopropanolamine (TIPA) is a basic chemical used in many applications serving as emulsifiers, stabilizers, chemical intermediates and neutralizers that achieve basicity, buffering and alkalinity objectives.

Major applications include water-based coating applications and agricultural products. Additional applications are antistat agents for polymers, corrosion inhibitor, electrodeposition/electrocoating, lubricants, paper, pigment dispersion, plastics, polyurethane additive, reaction intermediates, rubber curing, surfactants, mineral dispersion, and urethanes.

DOW Triisopropanolamine is available as TIPA 99, TIPA Low Freeze Grade (LFG) & TIPA 101.

- TIPA 99—This commercial grade triisopropanolamine is a tertiary amine.
- TIPA LFG—This triisopropanolamine is a low freeze grade variation of TIPA for easier handling in colder ambient temperatures (freezing point: 5°C/41°F). It is a blend of 85% TIPA and 15% deionized water.
- TIPA 101—This triisopropanolamine is the non-prime product from the process. It is a blend of 90% TIPA and 10% deionized water, with a freezing point of 17.2°C/62.6°F

Features and Benefits

Coatings

- Cross-linker in special niche water-based coating applications
- In waterborne coatings: good acid neutralization, improves water solubility, blocks organic acids in water, improves package stability, reduces water-sensitivity and discoloration

Herbicides/Algaecides/Fungicides/Pesticides

- Neutralizes acidic herbicides and other acidic components.
- Good water solubility, freeze stability

Typical Physical Properties⁽¹⁾

Properties	TIPA	TIPA LFG	TIPA 101
Formula	[CH ₃ CH(OH)CH ₂] ₃ N		
Molecular Weight	191.27		
CAS Number	122-20-3	122-20-3 7732-18-5 ⁽²⁾	122-20-3 7732-18-5 ⁽²⁾
Physical Form	Solid	Liquid	Liquid
Vapor Pressure at 60°C, mm Hg	0.004		
Boiling Point, °C (°F) at 760 mm Hg	306 (583)	104 (219)	107 (225)
Freezing Point, °C (°F)	44 (111.2) ⁽³⁾	5 (41) ⁽³⁾	17 (62.6) ⁽³⁾
Flash Point, Cleveland Open Cup, °C (°F)	160 (320)	None ^(4,5)	None ⁽⁴⁾
Specific Gravity at 70/4°C	0.988		
At 25/4°C		1.027	1.025
Pounds per gallon at 70°C	8.24		
At 25°C		8.56	8.55
Viscosity, cps			
At 25°C		240	420
At 60°C	100	25 ⁽⁶⁾	37 ⁽⁶⁾
Solubility at 25°C, gm/100gm			
ACE	450		
MEOH	>500		
ETH	365		
H ₂ O	>500		

(1) Data represent typical physical properties only and should not be construed as product specifications.

(2) H₂O

(3) Supercools: freezing point results show variation

(4) H.T. Setflash

(5) No flashpoint observed up to the boiling point. See flashpoint of TIPA.

(6) At 54°C

Product Stewardship

Dow encourages its customers and potential users to review their applications from the standpoint of human health and environmental aspects. To help ensure that Dow products are not used in ways for which they are not intended or tested, Dow personnel will assist customers in dealing with environmental and product safety considerations. Dow literature, including Material Safety Data Sheets, should be consulted by customers and potential users prior to use.

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