

MILIDIN GX-3 *pH Buffer*

Milidin GX-3 is formulated for use in various applications as an additive for emulsions and aqueous systems where control of pH is critical. It prolongs the useful life of aqueous solutions and emulsions by stabilizing the pH at 8-9. It does this by acting as a buffer during the changes in chemistry that take place in a solution or emulsion over time. These changes include the effects of oxidation and additive depletion that can cause reduced pH. **Milidin GX-3's** high reserve alkalinity acts to minimize these effects by ensuring the system maintains or stays close to its original pH.

Milidin GX-3 can be mixed into water-based solutions or emulsions so the concentration in the finished material is 1000-2000 ppm, which is sufficient for pH control. **Milidin GX-3** usually can be added at any stage during processing, while maintaining a pH at 7.0 or above prior to addition.

Typical Properties

Property	Typical Result
Solubility	Water, in all proportions
Appearance	Clear yellow liquid
Specific Gravity @ 25°C	1.010 – 1.0110
Odor	Mild
pH, 1% Solution	10.5

Tables 1 & 2 show TGA volatility performance of **Milidin GX-3** vs. AMP-95:

Minutes	Weight Loss, %	
	GX-3	AMP-95
5° C		
5	2.9	3.7
10	5.3	7.7
15	6.5	10.3
25	8.1	15.0
35	8.9	19.3
60	10.1	29.9

Table 1: TGA Isotherm @ 50°C (N₂); GX3 & AMP-95

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Temperature ° C	Weight Loss, %	
	GX-3	AMP-95
50	1.42	0.93
75	3.35	3.53
100	6.76	10.2
150	23.2	62.1
200	59.5	99.3

Table 2: TGA @ 40°C min⁻¹ (N₂); GX3 & AMP-95

Table 3 lists oven volatility study results. Weight loss was measured over set timeframes and temperatures as demonstrated below for **Milidin GX-3** and AMP-95:

Oven Parameters	Weight Loss, %	
	GX-3*	AMP-95
4hrs @ 50°C	14.3*	8.7
3hrs @ 75°C	19.1	27.4
2hrs @ 105°C	18.7*	16.0
4hrs @ 105°C	36.0	28.0

Table 3: Oven Weight loss studies, standard air flow; GX3 & AMP-95

***Note:** GX-3 initial weight loss is reflective of water loss (~12% composition by wt)

Milidin GX-3 is compatible with soluble oil concentrates, semi-synthetics and synthetic fluids. It does not contain any phenol or phenolic derivatives, nitrates, nitrites or nitrosoamines. Recommended use levels for coolants and soluble oils are 1-3%. **Milidin GX-3** is compatible with other additives that are stable under alkaline conditions. Refer to MSDS prior to using.

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