ASCEND®
PERFORMANCE MATERIALS

FlexaTrac™ -NTA

CHELATING AGENT

KEY CHARACTERISTICS

- **Readily biodegradable**
- **Completely water soluble**
- **Effective buffering agent**
- **Deflocculating properties**
- **Stable in acids and bases**
- **Stable over a wide temperature range**
- **Available in powder and solution forms**

FlexaTrac™-NTA

CHELATING AGENT

FlexaTrac™-NTA is an effective, environmentally-friendly chelating agent used to reduce the negative effects of hardness ions in applications like dish washing, hard surface cleaning and sulfur scavenging in refineries.

Thirty percent more effective than other commonly-used chelating agents, NTA requires less material to chelate the same amount. Ascend Performance Materials produces FlexaTac-NTA in a powder and 40% solution to meet the needs of most formulations.

CHARACTERISTICS

	NTA powder*	NTA solution**
Molecular weight	275.1	275.1
Appearance	White, crystalline powder	Clear, colorless or pale yellow liquid
Assay, % $N(CH_2COONa)_3$ H_2O	99 min	41.7-44.4
Through 200 mesh	30 max	N/A
Decomposition temperature (°C)	340	N/A
Specific gravity at 25°C / 15.5°C	N/A	1.280-1.305
pH, 1% solution at 25°C	10.5-11.7	10.5-11.5
Flash point, °F (Pensky-Martin cc)	275.1	N/A
Total moisture, % at 200°C	7 max	Approx. 58

* Nitrilotriacetic Acid, Trisodium Salt, Monohydrate
** Nitrilotriacetic Acid, Trisodium Salt, 40% Solution

CAS 18662-53-8 is for NTA monohydrate powder.
CAS 5064-31-3 is for the NTA 40% Solution.

Hard Surface Cleaning

- Better performance at lower loads
- Excellent buffering capacity and building action
- Stabilizes and prolongs the life of cleaning baths

Vehicle Wash

- Effective over a wide range of soiling conditions
- Superior performance over most other chelating agents
- Cleans without harming paints, metals or rubber

Energy

- Prevents and removes scale formation
- Removes hydrogen sulfide to sweeten gas
- Used in corrosion inhibition packages in emulsification and emulsion breaking

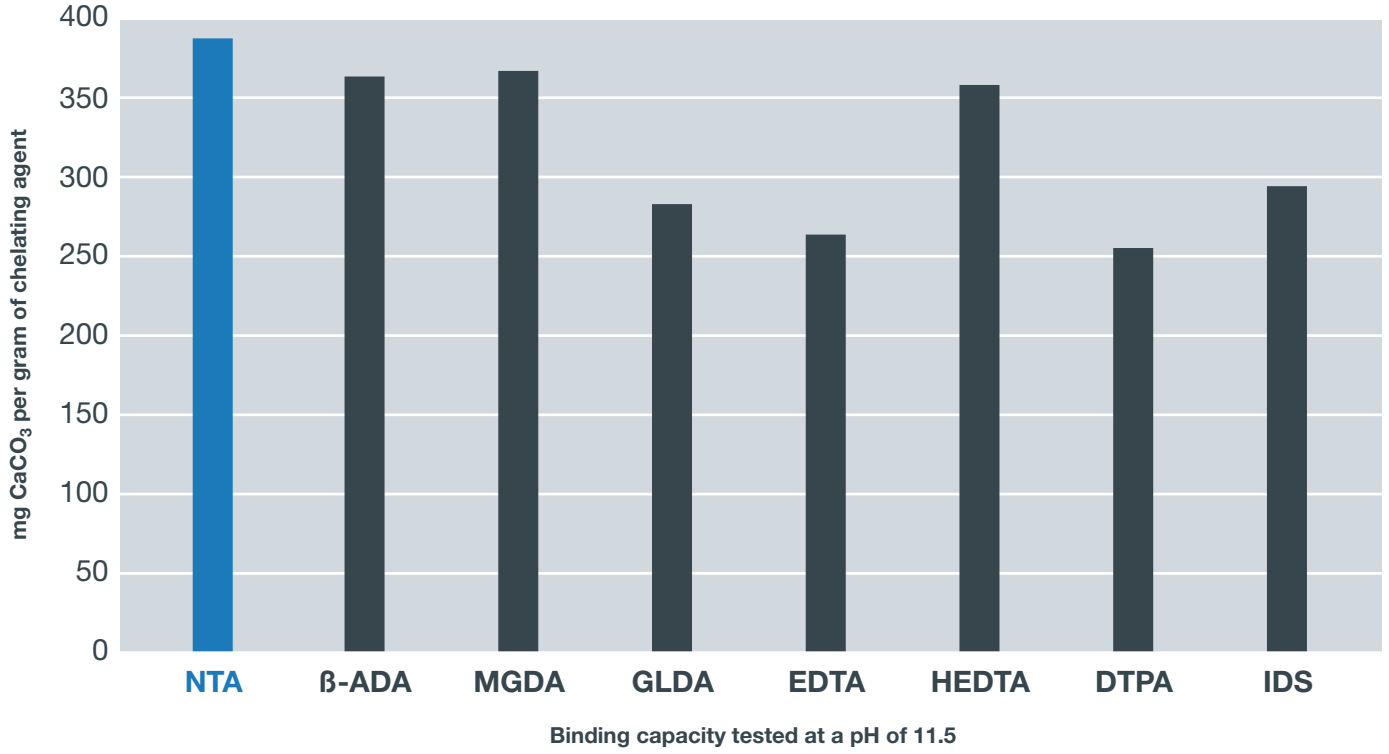
INDUSTRIAL & INSTITUTIONAL DISH CLEANING

- **Cleans dishes in fewer cycles by sequestering hardness ions and capturing more residue.**
- **Allows lower solids content, lower viscosity and greater ease of mixing and handling.**
- **Brings a higher level of performance in liquid detergents.**
- **Is compatible with other common I&I detergent ingredients.**

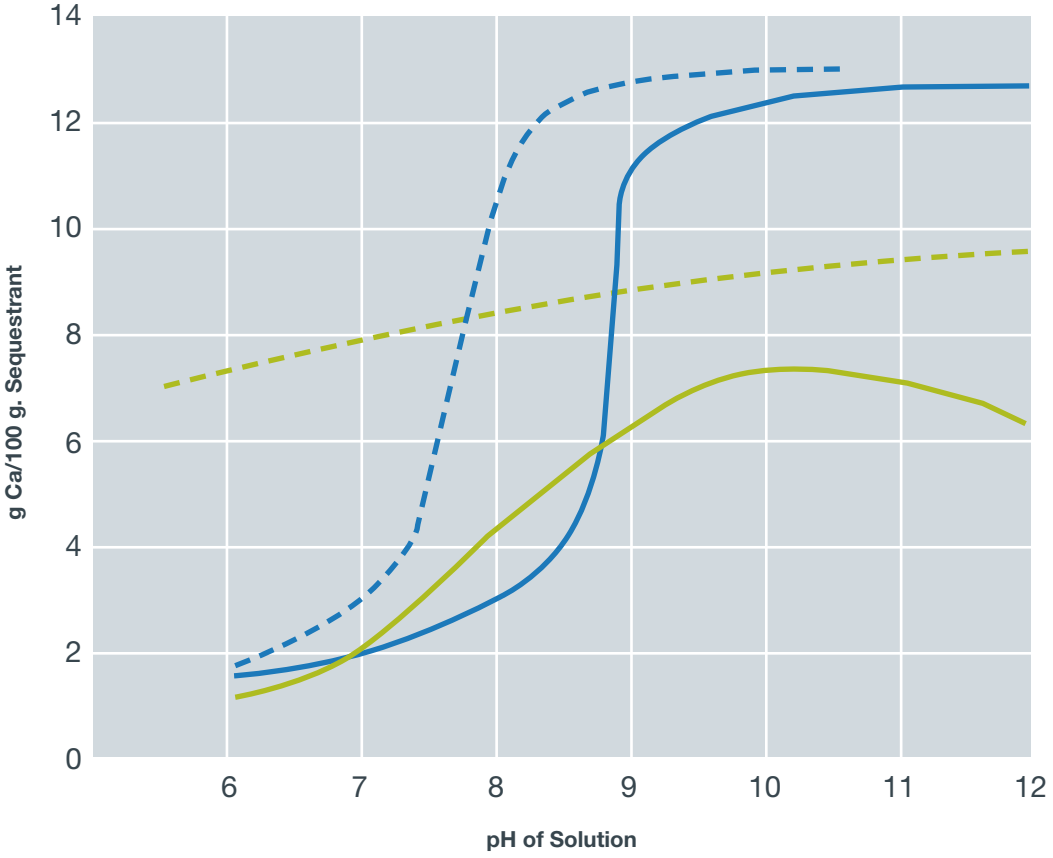
CHELATES	NTA	EDTA	MGDA	GLDA	STP
TECHNICAL					
pKCa at pH 10-11 at 0.1M conc.	6.4	10.6	6.8	5.9	5.3
Effective binding Ca between pH	8-12	6-13	9-12	9-12	4-12
Dissolving Ca soap	++	+++	++	0	0
Supports cleaning	++	++	++	+	++
Stain removal	++	++	++	+	+
Granular form available	yes	yes	hygroscopic	hygroscopic	yes
Solubility in water	very good	very good	very good	very good	12% max
Solubility in NaOH (10%)	good	good	good	very good	poor
Buffering capacity (Na salt)	some	some	some	some	some
MISCELLANEOUS TECHNICAL					
Corrosion inhibition	no	no	no	no	yes
Causing corrosion	no	no	no	no	no
Chlorine stability	no	no	no	no	yes
Stability in Alkali	+++	+++	+++	+++	+++
Stability at higher temperatures	+++	++	++	++	+++
Supporting disinfection by quats	++	+++	++	+	0
SAFETY					
Perceived environmental profile	neutral	negative	neutral	neutral	negative

+ Denotes minimal effect +++ Denotes very effective

BINDING CAPACITY CHART



CALCIUM SEQUESTRATION AT VARIOUS TEMPERATURES



FlexaTrac-NTA maintains its sequestration power at lower temperatures whereas sodium triphosphate (STP) loses some of its power. When lower wash temperatures are used to save energy, FlexaTrac-NTA outperforms STP on a cost/performance basis.

About Ascend

Ascend Performance Materials is a global leader in the production of high-quality plasctics, chemicals, and fibers. As the world's largest fully integrated manufacturer of nylon 6,6 resin, our manufacturing processes are vertically integrated, ensuring the highest level of quality and economies of scale. Ascend's specialty chemicals and blends of acids, amines and esters are used in a variety of applications and industries. We offer customized solutions through formulated products and superior technical support.

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inspiring everyday

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