Scale Inhibition

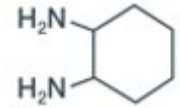
Our specialty amines FlexaTram™- BHM, FlexaTram™- DAM, Hexatran™ & FlexaTrac® acids provide excellent protection against the most problematic scales like:
Calcium carbonate/ calcite ($CaCO_3$), Calcium sulfate from gypsum ($CaSO_4$), Barium/ Barite ($BaSO_4$) & Strontium/ celestite ($SeSO_4$)

Product	Use	Application	Benefit
FlexaTrac™ NTA-100	As-is	• Prevents iron sulfide scaling • Fe/Ca chelation for water treatment	• Optimal in mid-to-low temps • Dissolves iron when used in stoichiometric amounts
FlexaTram™ DAM-800	Phosphonates & salts	• Phosphorous acid version for $CaCO_3$ • KCl for $CaSO_4$ inhibition	• Effective at higher pH (6-8) • Ability to inhibit against wide range of material buildup.
FlexaTram™ BHM		• Effective against dolomite & $BaSO_4$	• Effective at low pH (2-4) • High Ca ion tolerance at a wide pH range and high temps
Hexatran™		• Effective against dolomite & $BaSO_4$	• Effective at ultra low pH (1-2) • High Ca ion tolerance at a wide pH range & high temps

Our Chemistries

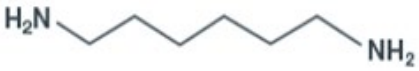
FlexaTram™ DAM

1,2- Diaminocyclohexane



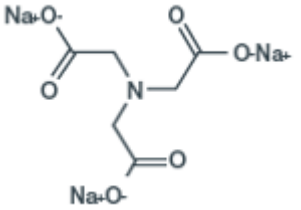
+

Hexamethylenediamine



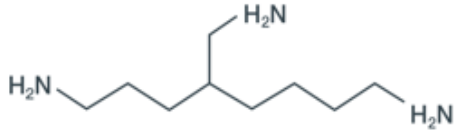
FlexaTrac™ NTA

Nitrilotriacetate, Trisodium



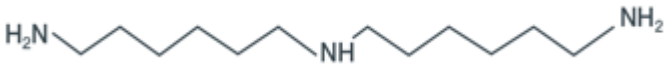
Hexatran™

Triaminononane



FlexaTram™ BHM

Bis(hexamethylene)Triamine

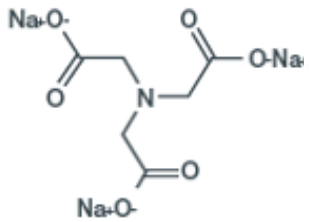


ASCEND PERFORMANCE MATERIALS

FlexaTrac™ NTA
Nitrilotriacetate acid, Trisodium Salt

Grade	*Appearance*	Assay *(NTA%)*	*Molecular weight*
FlexaTrac™ NTA-100*	White, crystalline powder	>99	275.1 g/mol
FlexaTrac™ NTA-200**	Pale liquid	42	

*Available in Rail, 50lb/ 2000lb bags
** Available in Truck, 500lb drums



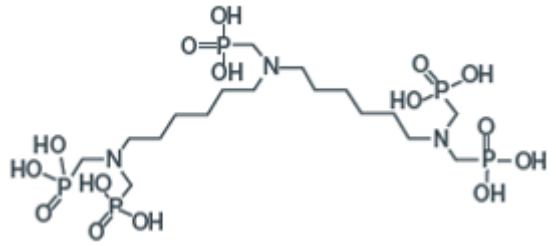
FlexaTrac™ NTA

	NTA	EDTA
Readily biodegradable	Yes	No
Regulated transport	No	Yes
Better GHS pictogram*	Yes	No

Drop-in replacement for EDTA
- Excellent performance for iron control
- Stable in wide pH and temperature range

FlexaTram™ BHM
Bis(hexamethylene)triamine

Grade	Assay *(BHM%)*	Nickel *(ppm)*	Water *(wt%)*
FlexaTram™ BHM-120	+45	<1500	<5
FlexaTram™ BHM-123	+45	<1500	<3
FlexaTram™ BHM-121	+45	<1500	<1
FlexaTram™ BHM-150	+45	<600	<5
FlexaTram™ BHM-151	+45	<600	<1



Used in BHMTMP Phosphonate

Can be formulated with cationic amines for combination scale/ corrosion prevention
- Effective in temperatures up to 120°C and low pH (1-2)
- Good for general application against wide range of scales
- High calcium ion tolerance

ASCEND PERFORMANCE MATERIALS

FlexaTram™ DAM

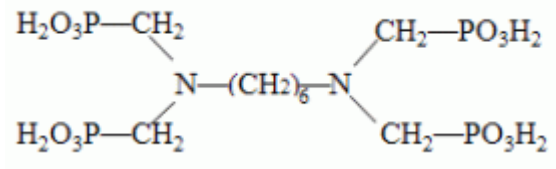
Diaminocyclohexane (DCH)& Hexamethylenediamine (HDA)

Grade	Assay *(HMD%)*	Assay *(DCH)*	Water *(wt%)*
FlexaTram™ DAM-800	>95	<5	<5

FlexaTram™ HDA

Hexamethylenediamine (HDA)

Grade	Assay *(HMD%)*	Assay *(HMI)*	Water *(wt%)*
FlexaTram™ HDA-980	>98	<1	<2



FlexaTram™ DAM + Phosphonic Acid = HMDTMPA
Hexamethylene diamine-tetra(methylene phosphonic) acid

For multi-purpose use against a wide range of scales

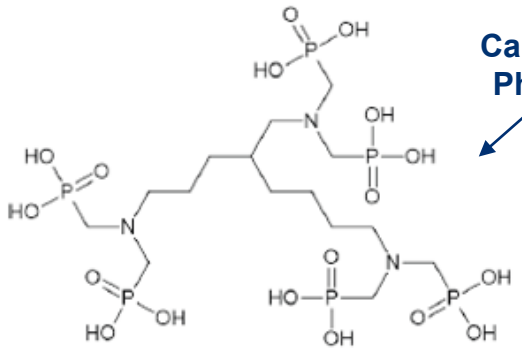
- Long lasting
- Effective in high pH (6-8)

Hexatran™

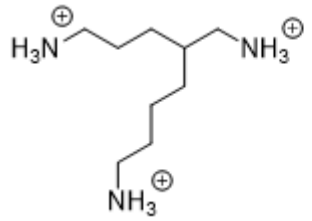
Triaminononane (TAN)

Grade	Assay *(TAN%)*	Water *(wt%)*
Hexatran™ 200	>80	<3.5
Hexatran™ 300	>50	<5
Hexatran™ 100	>95	<.5
Hexatran™ 110	>99	<.5
Hexasalt™ H-125*	25	n/a

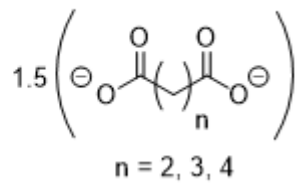
*Sold in salt form



Can be used in Phosphonate or salt



Trifunctional primary amines



ASCEND PERFORMANCE MATERIALS