

THATCHER COMPANY OF CALIFORNIA, INC.
8625 Unsworth Avenue, Sacramento, CA 95828



Phone (916) 389-2517
Fax (916) 389-2516

February 17, 2023

AFFIDAVIT OF COMPLIANCE

Ammonium Sulfate 40%

This affidavit certifies and warrants the ammonium sulfate 40% to be delivered to the Bay Area Chemical Consortium Agencies by Thatcher Company of California, Inc. fully complies with A.W.W.A. Specifications and ANSI/NSF Standard 60.

A handwritten signature in blue ink, appearing to be 'S K S', written over a horizontal line.

Scott K. Sorensen
President

ATTACHMENT 1

General Manager: Phillip Belden
Phone Number (702) 219-2372
E-mail Address: philip.belden@tchem.com

Market Analyst: Zach Brackus
Phone Number: (800) 375-7758 ext. 1417
E-mail Address: zach.brackus@tchem.com



THATCHER COMPANY OF CALIFORNIA, INC.

8625 Unsworth Ave.
Sacramento, CA 95828
916-389-2520

PRODUCT SPECIFICATION

AMMONIUM SULFATE 40%

CAS NUMBER: 7783-20-0

CHEMICAL FORMULA: $(\text{NH}_4)_2\text{SO}_4$

MOLECULAR WEIGHT: 132.14

PRODUCT DESCRIPTION: A clear to slightly yellow liquid with a characteristic pungent odor

SPECIFICATIONS:	Assay $(\%(\text{NH}_4)_2\text{SO}_4)$:	39-41
	Density (g/ml, 20C):	1.228-1.232
	Color (APHA, max):	<20
	Iron (ppm, max):	<2.5
	Free Acid $(\%\text{H}_2\text{SO}_4)$:	<0.05
	Heavy Metals (as Hg, ppm):	<1

CERTIFICATIONS:



AMMONIUM SULFATE
ANSI/NSF 60
<35Y2>
MUL: 62.5 mg/L

WARRANTY

This information is, to the best of our knowledge, accurate, but may not be complete. Thatcher Company furnishes this information in good faith, but without warranty, representation or guarantee of its accuracy, completeness or reliability.

4/27/2018

FDPH.MH17003 - Drinking Water Treatment Chemicals

Drinking Water Treatment Chemicals

Thatcher Group, Inc.

1905 FORTUNE RD

PO BOX 27407

SALT LAKE CITY, UT 84127-0407 United States

MH17003

NSF/ANSI 60

Plant at: Thatcher Chemical of Florida, Inc., Deland, FL

Trade Dsg	Conditions of Acceptability	Category	Max Use Level (mg/L)
Ferric Sulfate	-	Coagulation and Flocculation Products	500
Ferric Sulfate, 10 - 13% Iron	-	Coagulation and Flocculation Products	500
Aluminum Sulfate [*Al]	[Al]	Coagulation and Flocculation Chemicals	150
Poly Phosphate Ortho Phosphate Blends	-	Coagulation and Flocculation Chemicals	26
T-Floc B135 [*Al]	[Al]	Coagulation and Flocculation Chemicals	250
TI-2914	-	Coagulation and Flocculation Chemicals	33
Compliance GT	-	Coagulation and Flocculation	43
Soda Ash	-	pH Adjustment	100
Ammonium Sulfate, 40%	-	Disinfection and Oxidation	62.5
Hydrogen Peroxide 11%-20%	-	Disinfection and Oxidation Chemicals	5.2
Hydrogen Peroxide 21%-30%	-	Disinfection and Oxidation Chemicals	3.5
Hydrogen Peroxide 31%-40%	-	Disinfection and Oxidation Chemicals	2.6
Hydrogen Peroxide 34%	-	Disinfection and Oxidation Chemicals	3
Hydrogen Peroxide 41%-49%	-	Disinfection and Oxidation Chemicals	2.1
Hydrogen Peroxide 50%	-	Disinfection and Oxidation Chemicals	2.1
Sodium Bisulfite 25%	-	Miscellaneous Treatment Chemicals	30

Sodium Bisulfite 38-40%	-	Miscellaneous Treatment Chemicals	18
Hydrofluosilicic Acid	-	Miscellaneous Treatment Chemicals	6
Citric Acid Solution [*OL]	-	Membrane Cleaner	-
Citric Acid Solution	-	pH Adjustment	125
Zinc Orthophosphate			
ZO-01 thru ZO-05	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	78
ZO-06 thru ZO-10	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	39
ZO-11 thru ZO-15	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	26
ZO-16 thru ZO-20	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	19
TI-2901	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	38
TI-3021-O	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	28
TI-3031	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	27.8
TI-3045	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	30

Plant at: Thatcher Chemical of Florida, Inc., Palmetto, FL

Trade Dsg	Conditions of Acceptability	Category	Max Use Level (mg/L)
Ferric Sulfate	-	Coagulation and Flocculation Products	500
Ferric Sulfate, 10 - 13% Iron	-	Coagulation and Flocculation Products	500
Compliance GT	-	Coagulation and Flocculation	43
T-Floc B41 [*Al]	-	Coagulation and Flocculation	178
Ammonium Sulfate, 40%	-	Disinfection and Oxidation	62.5
Hydrogen Peroxide 11%-20%	-	Disinfection and Oxidation Chemicals	5.2
Hydrogen Peroxide 21%-30%	-	Disinfection and Oxidation Chemicals	3.5
Hydrogen Peroxide 31%-40%	-	Disinfection and Oxidation Chemicals	2.6
Hydrogen Peroxide 34%	-	Disinfection and Oxidation Chemicals	3
Hydrogen Peroxide 41%-49%	-	Disinfection and Oxidation Chemicals	2.1

Hydrogen Peroxide 50%	-	Disinfection and Oxidation Chemicals	2.1
Sodium Bisulfite 25%	-	Miscellaneous Treatment Chemicals	30
Sodium Bisulfite 38-40%	-	Miscellaneous Treatment Chemicals	18
Hydrofluosilicic Acid	-	Miscellaneous Treatment Chemicals	6
Citric Acid Solution [*OL]	-	Membrane Cleaner	-
Citric Acid Solution	-	pH Adjustment	125

Plant at: Thatcher Company of Arizona, Inc., Buckeye, AZ

Trade Dsg	Conditions of Acceptability	Category	Max Use Level (mg/L)
Aluminum Sulfate [*Al]	[Al]	Coagulation and Flocculation Chemicals	150
Poly Phosphate Ortho Phosphate Blends	-	Coagulation and Flocculation Chemicals	26
Alum, Acidified X [*Al]	-	Flocculation	150
TI-3020	-	Corrosion and Scale Control	16
Sulfuric Acid 20 - 39%	-	pH Adjustment	120
Sulfuric Acid 40 - 59%	-	pH Adjustment	84
Sulfuric Acid 60 - 79%	-	pH Adjustment	63
Sulfuric Acid 80 - 93%	-	pH Adjustment	50
Sulfuric Acid, 98%	-	pH Adjustment	50
Sodium Chlorite, 18.75%	-	Disinfection and Oxidation	37.3
Sodium Chlorite, 25%	-	Disinfection and Oxidation	28
Sodium Chlorite, 30%	-	Disinfection and Oxidation	23.3
Sodium Chlorite, 31.25%	-	Disinfection and Oxidation	22.4
Sodium Chlorite, 37%	-	Disinfection and Oxidation	18.9
Sodium Chlorite, 7.5%	-	Disinfection and Oxidation	93.3
Sodium Bisulfite 25%	-	Miscellaneous Treatment Chemicals	30
Sodium Bisulfite 38-40%	-	Miscellaneous Treatment Chemicals	18
Copper Sulfate Solution 10-15% [*Cu]	[Cu]	Miscellaneous Treatment Chemicals	26
Copper Sulfate Solution 16-20% [*Cu]	[Cu]	Miscellaneous Treatment Chemicals	20

Copper Sulfate Solution 21-25% [*Cu]	-	Miscellaneous Treatment Chemicals	16
Hydrofluosilicic Acid	-	Miscellaneous Treatment Chemicals	6
Sodium Hydroxide 18%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	278
Sodium Hydroxide 20%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	250
Sodium Hydroxide 25%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	200
Sodium Hydroxide 30%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	167
Sodium Hydroxide 33%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	152
Sodium Hydroxide 50%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	100
Citric Acid Solution [*OL]	-	Membrane Cleaner	-
Citric Acid Solution	-	pH Adjustment	125
TI-2903	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	27.5
TI-2904	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	33
TI-2906	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	29
TI-2907	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	14.9
TI-2908	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	24.9
TI-2909	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	9.59
TI-3021	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	28
Zinc Orthophosphate	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	16.5

Plant at: Thatcher Company of California, Inc., Sacramento, CA

Trade Dsg	Conditions of Acceptability	Category	Max Use Level (mg/L)
Compliance Fe 3500	-	Coagulation and Flocculation Products	500

Compliance Fe 3600	-	Coagulation and Flocculation Products	500
Compliance Fe 3625	-	Coagulation and Flocculation Products	500
Compliance Fe 3650	-	Coagulation and Flocculation Products	500
Ferric Sulfate 10% IMG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 10% WTG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 10-13% Iron	-	Coagulation and Flocculation Products	500
Ferric Sulfate 12% IMG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 12% WTG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 13% IMG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 13% WTG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 13% WTG-M	-	Coagulation and Flocculation Products	500
Aluminum Sulfate [*Al]	[Al]	Coagulation and Flocculation Chemicals	150
Aries 293	-	Coagulation and Flocculation Chemicals	250
Ferric Chloride	-	Coagulation and Flocculation Chemicals	250
Poly Phosphate Ortho Phosphate Blends	-	Coagulation and Flocculation Chemicals	26
T-Floc B-135	[Al]	Coagulation and Flocculation Chemicals	250
T-Floc B-41	[Al], [PA]	Coagulation and Flocculation Chemicals	250
Alum, Acidified X [*Al]	-	Flocculation	150
Chlorine	-	Disinfection and Oxidation Chemicals	30
Pure Chlor	[HPH]	Disinfection and Oxidation Chemicals	30
Sani-Chlor	[HPH]	Disinfection and Oxidation Chemicals	30
Sani-Chlor AG	[HPH]	Disinfection and Oxidation Chemicals	30
Sierra Pure Chlor	[HPH]	Disinfection and Oxidation Chemicals	30
Sierra Sani-Chlor	[HPH]	Disinfection and Oxidation Chemicals	30
Sierra Sani-Chlor AG	[HPH]	Disinfection and Oxidation Chemicals	30
Hydrofluosilicic Acid	-	Miscellaneous Treatment Chemicals	6
Hydrochloric Acid			
Hydrochloric Acid 20 Be	-	Corrosion& Scale Control, pH Adjustment	40
Muriatic Acid	-	Corrosion& Scale Control, pH Adjustment	40
Sodium Hydroxide 18%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	278

Sodium Hydroxide 20%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	250
Sodium Hydroxide 25%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	200
Sodium Hydroxide 30%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	167
Sodium Hydroxide 33%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	152
Sodium Hydroxide 50%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	100
Zinc Orthophosphate			
ZO-01 thru ZO-05	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	78
ZO-06 thru ZO-10	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	39
ZO-11 thru ZO-15	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	26
ZO-16 thru ZO-20	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	19

Plant at: Thatcher Company of Montana, Inc., Missoula, MT

Trade Dsg	Conditions of Acceptability	Category	Max Use Level (mg/L)
Aluminum Sulfate [*Al]	-	Coagulation and Flocculation Chemicals	400
TI-3021	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	28

Plant at: Thatcher Company of Nevada, Inc., Henderson, NV

Trade Dsg	Conditions of Acceptability	Category	Max Use Level (mg/L)
Aluminum Sulfate [*Al]	[Al]	Coagulation and Flocculation Chemicals	150
Aluminum Sulfate, Acidified [*Al]	[Al]	Coagulation and Flocculation Chemicals	150
Poly Phosphate Ortho Phosphate Blends	-	Coagulation and Flocculation Chemicals	26
Aqua Ammonia 10% to 14%	-	Disinfection and Oxidation	21

Aqua Ammonia 15% to 19%	-	Disinfection and Oxidation	15
Aqua Ammonia 20% to 24%	-	Disinfection and Oxidation	12
Aqua Ammonia 25% to 29%	-	Disinfection and Oxidation	10
Chlorine	-	Disinfection and Oxidation Chemicals	30
T-Chlor 10.0 [*HPH]	-	Disinfection and Oxidation Chemicals	105
T-Chlor 12.5 [*HPH]	-	Disinfection and Oxidation Chemicals	84
T-Chlor 5.25 [*HPH]	-	Disinfection and Oxidation Chemicals	199
Hydrofluosilicic Acid	-	Miscellaneous Treatment Chemicals	6
Citric Acid Solution [*OL]	-	Membrane Cleaner	-
Citric Acid Solution	-	pH Adjustment	125
Zinc Orthophosphate			
ZO-01 thru ZO-05	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	78
ZO-06 thru ZO-10	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	39
ZO-11 thru ZO-15	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	26
ZO-16 thru ZO-20	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	19

Plant at: Thatcher Company of Nevada, Inc., Sparks, NV

Trade Dsg	Conditions of Acceptability	Category	Max Use Level (mg/L)
Chlorine	-	Disinfection and Oxidation Chemicals	30
Pure Chlor	[HPH]	Disinfection and Oxidation Chemicals	84
Sani-Chlor	[HPH]	Disinfection and Oxidation Chemicals	84
Sani-Chlor AG	[HPH]	Disinfection and Oxidation Chemicals	84
Sierra Pure Chlor	[HPH]	Disinfection and Oxidation Chemicals	84
Sierra Sani-Chlor	[HPH]	Disinfection and Oxidation Chemicals	84
Sierra Sani-Chlor AG	[HPH]	Disinfection and Oxidation Chemicals	84
Citric Acid, 50% Solution	[OL]	Miscellaneous Water Supply Chemicals	-
Citric Acid, Liquid	[OL]	Miscellaneous Water Supply Chemicals	-

Citric Acid, Solution	[OL]	Miscellaneous Water Supply Chemicals	-
Hydrochloric Acid			
Hydrochloric Acid 20 Be	-	Corrosion& Scale Control, pH Adjustment	40
Muriatic Acid	-	Corrosion& Scale Control, pH Adjustment	40
Sodium Hydroxide Solution	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	100

Plant at: Thatcher Company of New York, Inc., Williamson, NY

Trade Dsg	Conditions of Acceptability	Category	Max Use Level (mg/L)
Aluminum Sulfate [*Al]	[A]	Coagulation and Flocculation Chemicals	150
Compliance GT [*Al]	[A]	Coagulation and Flocculation Chemicals	43
Poly Phosphate Ortho Phosphate Blends	-	Coagulation and Flocculation Chemicals	26
Sodium Aluminate [*Al]	-	Coagulation and Flocculation Chemicals	43
Compliance GT	-	Coagulation and Flocculation	43
Zinc Orthophosphate [*Zn]	-	Corrosion and Scale Control	16.5
Soda Ash	-	pH Adjustment	100
Sodium Permanganate, 11% - 15% [*Mn]	-	Disinfection and Oxidation	298
Sodium Permanganate, 16% - 20% [*Mn]	-	Disinfection and Oxidation	224
Sodium Permanganate, 21% - 25% [*Mn]	-	Disinfection and Oxidation	179
Sodium Permanganate, 26% - 30% [*Mn]	-	Disinfection and Oxidation	149
Sodium Permanganate, 31% - 35% [*Mn]	-	Disinfection and Oxidation	128
Sodium Permanganate, 36% - 39% [*Mn]	-	Disinfection and Oxidation	115
Sodium Permanganate, 5% - 10% [*Mn]	-	Disinfection and Oxidation	448
Ammonium Sulfate, 40%	-	Disinfection and Oxidation	62.5
Hydrogen Peroxide 11%-20%	-	Disinfection and Oxidation Chemicals	40
Hydrogen Peroxide 21%-30%	-	Disinfection and Oxidation Chemicals	26.5

Hydrogen Peroxide 31%-40%	-	Disinfection and Oxidation Chemicals	20
Hydrogen Peroxide 34%	-	Disinfection and Oxidation Chemicals	23.5
Hydrogen Peroxide 41%-49%	-	Disinfection and Oxidation Chemicals	16
Hydrogen Peroxide 50%	-	Disinfection and Oxidation Chemicals	16
Sodium Permanganate, 40% [*Mn]	-	Disinfection and Oxidation Chemicals	112
Hydrofluosilicic Acid	-	Miscellaneous Treatment Chemicals	6
Citric Acid Solution [*OL]	-	Membrane Cleaner	-
Citric Acid Solution	-	pH Adjustment	125
Zinc Orthophosphate	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	16.5

Plant at: Thatcher Company, Inc., Salt Lake City, UT

Trade Dsg	Conditions of Acceptability	Category	Max Use Level (mg/L)
Compliance Fe 3500	-	Coagulation and Flocculation Products	500
Compliance Fe 3600	-	Coagulation and Flocculation Products	500
Compliance Fe 3625	-	Coagulation and Flocculation Products	500
Compliance Fe 3650	-	Coagulation and Flocculation Products	500
Ferric Sulfate 10% IMG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 10% WTG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 10-13% Iron	-	Coagulation and Flocculation Products	500
Ferric Sulfate 12% IMG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 12% WTG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 13% IMG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 13% WTG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 13% WTG-M	-	Coagulation and Flocculation Products	500
Aluminum Sulfate [*Al]	[Al]	Coagulation and Flocculation Chemicals	150
Compliance GT	[Al]	Coagulation and Flocculation Chemicals	40
Ferric Chloride	-	Coagulation and Flocculation Chemicals	100
Poly Phosphate Ortho Phosphate Blends	-	Coagulation and Flocculation Chemicals	26

Sodium Aluminate [*Al]	-	Coagulation and Flocculation Chemicals	40
T-Floc 1307	-	Coagulation and Flocculation Chemicals	1
T-Floc 1361	-	Coagulation and Flocculation Chemicals	1
T-Floc 1362	-	Coagulation and Flocculation Chemicals	1
T-Floc 1367	-	Coagulation and Flocculation Chemicals	1
T-Floc 1368	-	Coagulation and Flocculation Chemicals	3
T-Floc 1434	-	Coagulation and Flocculation Chemicals	20
T-Floc 1436	-	Coagulation and Flocculation Chemicals	20
T-Floc 1465	-	Coagulation and Flocculation Chemicals	3
T-Floc 1474	-	Coagulation and Flocculation Chemicals	3
T-Floc 1526	-	Coagulation and Flocculation Chemicals	1
T-Floc 1527	-	Coagulation and Flocculation Chemicals	1
T-Floc 1539	-	Coagulation and Flocculation Chemicals	1
T-Floc 1551	-	Coagulation and Flocculation Chemicals	1
T-Floc 2540	-	Coagulation and Flocculation Chemicals	1
T-Floc 2552	-	Coagulation and Flocculation Chemicals	1
T-Floc 2645	-	Coagulation and Flocculation Chemicals	1
T-Floc 2656	-	Coagulation and Flocculation Chemicals	1
T-Floc B135 [*Al]	[Al]	Coagulation and Flocculation Chemicals	150
T-Floc C-148	-	Coagulation and Flocculation Chemicals	6
Ferrous Sulfate Solution	-	Coagulation and Flocculation	50
T-Floc B41 [*Al]	-	Coagulation and Flocculation	178
T-Floc IFD-151SJ	-	Coagulation and Flocculation	150
Alum, Acidified X [*Al]	-	Flocculation	150
T-Chem IXXXX	-	Flocculation	250
T-Floc B391 [*Al]	-	Flocculation	154
T-Floc 1306	-	Coagulation and Flocculation Products	1
T-Floc 1310	-	Coagulation and Flocculation Products	1
TI-3020	-	Corrosion and Scale Control	16
Soda Ash	-	pH Adjustment	100
Ammonium Sulfate, 40%	-	Disinfection and Oxidation	62.5

Anhydrous Ammonia	-	Disinfection and Oxidation Chemicals	5
Aqua Ammonia 28%	-	Disinfection and Oxidation Chemicals	35
Chlorine	-	Disinfection and Oxidation Chemicals	30
Hydrogen Peroxide 11%-20%	-	Disinfection and Oxidation Chemicals	5.2
Hydrogen Peroxide 21%-30%	-	Disinfection and Oxidation Chemicals	3.5
Hydrogen Peroxide 31%-40%	-	Disinfection and Oxidation Chemicals	2.6
Hydrogen Peroxide 34%	-	Disinfection and Oxidation Chemicals	3
Hydrogen Peroxide 41%-49%	-	Disinfection and Oxidation Chemicals	2.1
Hydrogen Peroxide 50%	-	Disinfection and Oxidation Chemicals	2.1
T-Chlor 10.0 [*HPH]	-	Disinfection and Oxidation Chemicals	105
T-Chlor 12.5 [*HPH]	-	Disinfection and Oxidation Chemicals	84
T-Chlor 5.25 [*HPH]	-	Disinfection and Oxidation Chemicals	199
Sodium Bisulfite 25%	-	Miscellaneous Treatment Chemicals	30
Sodium Bisulfite 38-40%	-	Miscellaneous Treatment Chemicals	18
Ammonium Bisulfite Solution	-	Miscellaneous Treatment Chemicals	50
Hydrofluosilicic Acid	-	Miscellaneous Treatment Chemicals	6
Hydrochloric Acid			
Hydrochloric Acid 20 Be	-	Corrosion& Scale Control, pH Adjustment	40
Muriatic Acid	-	Corrosion& Scale Control, pH Adjustment	40
Citric Acid Solution [*OL]	-	Membrane Cleaner	-
Citric Acid Solution	-	pH Adjustment	125
TI-2903	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	27.5
TI-2904	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	33
TI-2906	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	29
TI-2907	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	14.9

TI-2908	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	24.9
TI-2909	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	9.59
TI-3019	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	15.5
TI-3021	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	28
Zinc Orthophosphate [*Zn]	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	20
Sodium Hydroxide - 1%-5%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	1000
Sodium Hydroxide - 11%-15%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	333
Sodium Hydroxide - 16%-20%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	250
Sodium Hydroxide - 21%-25%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	200
Sodium Hydroxide - 26%-30%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	167
Sodium Hydroxide - 31%-35%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	142
Sodium Hydroxide - 36%-40%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	125
Sodium Hydroxide - 41%-45%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	111
Sodium Hydroxide - 46%-50%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	100
Sodium Hydroxide - 6%-10%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	500

Trade Dsg	Conditions of Acceptability	Category	Max Use Level (mg/L)
Aluminum Sulfate [*Al]	-	Coagulation and Flocculation Chemicals	400
Aluminum Sulfate [*Al]	-	Coagulation and Flocculation Chemicals	400
T-Floc 1410	-	Coagulation and Flocculation Chemicals	50
T-Floc 1410	-	Coagulation and Flocculation Chemicals	50

T-Floc 1417	-	Coagulation and Flocculation Chemicals	100
T-Floc 1417	-	Coagulation and Flocculation Chemicals	100
T-Floc 1419	-	Coagulation and Flocculation Chemicals	50
T-Floc 1419	-	Coagulation and Flocculation Chemicals	50
T-Floc 1420	-	Coagulation and Flocculation Chemicals	25
T-Floc 1420	-	Coagulation and Flocculation Chemicals	25
T-Floc 2100	-	Coagulation and Flocculation Chemicals	100
T-Floc 2202	-	Coagulation and Flocculation Chemicals	650
T-Floc 2653	-	Coagulation and Flocculation Chemicals	1
T-Floc 2662	-	Coagulation and Flocculation Chemicals	1
T-Floc B-12-L	-	Coagulation and Flocculation Chemicals	75
T-Floc B-21-L	-	Coagulation and Flocculation Chemicals	150
T-Floc IFD-201	-	Coagulation and Flocculation Chemicals	194
T-Floc IFD-4211	-	Coagulation and Flocculation Chemicals	139
Aqua Ammonia 19%	-	Disinfection and Oxidation Chemicals	52
Aqua Ammonia 25%	-	Disinfection and Oxidation Chemicals	40
Zinc Orthophosphate	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	16.5

[Al] - The finished drinking water shall be monitored to verify that the level of aluminum does not exceed 2 mg/L.

[Cu] - The finished drinking water shall be monitored to verify that the level of copper does not exceed 1.3 mg/L.

[HPH] - Refer to AWWA B300, "Hypochlorites" for recommended storage and handling practices.

[OL] - These products are designed to be used off-line and flushed out prior to using the system for drinking water, following the manufacturer's use instructions. The pH or other water chemistry of the influent and effluent water should be monitored to ensure that all traces of the product have been removed before placing into service.

[PA] - Complies with 40 CFR 141.111 requirements for percent monomer and dose when used at or below the MUL.

[Zn] - The finished drinking water shall be monitored to verify that the level of zinc does not exceed 2 mg/L.

[*Al] - The finished drinking water shall be monitored to verify that the level of aluminum does not exceed 2 mg/L.

[*Cu] - This chemical contains copper and can increase the amount of copper in the finished drinking water. The finished drinking water shall be monitored to verify that levels of copper do not exceed 1.3 mg/L.

[*HPH] - Refer to AWWA B300, "Hypochlorites" for recommended storage and handling practices.

[*Mn] - The finished drinking water shall be monitored to ensure that levels of manganese do not exceed 0.05 mg/L.

[*OL] - These products are designed to be used off-line and flushed out prior to using the system for drinking water, following the manufacturer's use instructions. The pH or other water chemistry of the influent and effluent water should be monitored to ensure that all traces of the product have been removed before placing into service.

[*Zn] - The finished drinking water shall be monitored to verify that the level of zinc does not exceed 2 mg/L.

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL Solutions' Follow - Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL Solutions' Follow - Up Service. Always look for the Mark on the product.

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SAFETY DATA SHEET

1. Identification

Product identifier	Ammonium Sulfate 40% Solution	
Other means of identification	None.	
Recommended use	Not available.	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Manufacturer		
Company name	Thatcher Company, Inc.	
Address	1905 Fortune Road Salt Lake City, UT 84104 United States	
Telephone	General Assistance 8-5	(801) 972-4587
E-mail	Not available.	
Emergency phone number	Chemtec (CCN 22106)	(800) 424-9300

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Not available.
Response	Not available.
Storage	Not available.
Disposal	Not available.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200.

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Call a physician if symptoms develop or persist.
Skin contact	Get medical attention if irritation develops and persists.
Eye contact	Get medical attention if irritation develops and persists.
Ingestion	Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	None known.

Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Not applicable.
Special protective equipment and precautions for firefighters	Wear suitable protective equipment.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.
6. Accidental release measures	
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage	
Precautions for safe handling	Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).
8. Exposure controls/personal protection	
Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	General ventilation normally adequate.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Not normally needed.
Skin protection	
Hand protection	Not normally needed.
Other	Not normally needed.
Respiratory protection	No personal respiratory protective equipment normally required.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
9. Physical and chemical properties	
Appearance	
Physical state	Liquid.
Form	Liquid.

Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH	5.5 0.1 molar aqueous solution
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	10.26 lb/gal estimated at 50 °C
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	None known.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Health injuries are not known or expected under normal use.
Skin contact	Health injuries are not known or expected under normal use.
Eye contact	Health injuries are not known or expected under normal use.
Ingestion	Health injuries are not known or expected under normal use.

Symptoms related to the physical, chemical and toxicological characteristics None known.

Information on toxicological effects

Acute toxicity Not available.

Skin corrosion/irritation	Health injuries are not known or expected under normal use.
Serious eye damage/eye irritation	Health injuries are not known or expected under normal use.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not listed.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

15. Regulatory information

US federal regulations	This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	
Not regulated.	
CERCLA Hazardous Substance List (40 CFR 302.4)	
Not listed.	

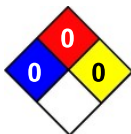
Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	09-21-2015
Revision date	05-26-2022
Version #	07
NFPA ratings	Health: 0 Flammability: 0 Instability: 0

NFPA ratings



Disclaimer

Thatcher Company cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

Revision Information

Product and Company Identification: Product Codes

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