



ACCELERATORS AND CURING AGENTS

SULFUR

PLAINTIFF'S EXHIBIT

MAR-306

The C. P. Hall Company carries a complete line of sulfurs for the rubber industry.

Typical Analysis

Appearance	Powder
Color	Yellow
Specific Gravity	2.07
Melting Point, °C.	113-119
Odor	None
Ignition Temperature, °C.	248-266
Solubility: in water	Insoluble

Brand	Purity % S (min)	Ash % (max)	Acidity % as H ₂ SO ₄ (max)	Moisture % (max)	SCREEN ANALYSIS			
					% thru 80 mesh	% thru 100 mesh	% thru 200 mesh	% thru 325 mesh
Devil® A	99.5	0.10	0.01	0.01	99.8	99.5	90-95	—
Devil® AA	99.5	0.10	0.01	0.01	99.8	99.5	97-99.5	—
(a) Spider®	97.0	2.50	nil	0.15	99.8	99.5	100	98
(b) Mist®	98.0	1.50	0.10	0.15	99.8	99.5	100	98
Star® A	99.8	0.05	0.0005	0.05	99.8	99.5	90-95	—
Star® AA	99.8	0.05	0.0005	0.05	99.8	99.5	97-100	—
Extra Fine	99.5	0.10	0.05	0.10	99.8	99.5	100	98

(a) Contains additive 2.25% magnesium carbonate, 0.25% tricalcium phosphate
(b) Contains additive wetting agent

NOTE: All brands can be supplied "oil treated," up to 2%, to reduce dust and promote dispersion.

Application

Sulfur is an important vulcanizing agent for manufacturing natural and synthetic rubber and latices. Sulfur is added directly or as a masterbatch to the solid elastomers and as a dispersion to latices.

DEVIL® A and AA

Commercial rubbermakers' sulfurs for vulcanizing both natural and synthetic rubber compounds.

SPIODER®

Rubbermakers' sulfur conditioned with magnesium carbonate to give a free-flowing, non-caking sulfur.

EXTRA-FINE RUBBERMAKERS®

This brand is identical with the Devil brands with the exception that it is a finer grind.

STAR® A and AA

Rubbermakers' sulfur for use where high-purity refined sulfur is required to meet process specifications.

MIST®

A wettable sulfur specifically developed for application in the processing of latex and foam rubbers.

Package

Multiwalled paper bags - 50s net

Storage and Handling

Should be stored in dry area and off the floor. Sulfur dust should be kept at a minimum. All metallic equipment should be electrically grounded. Dust will cause irritation to some individuals and some respiratory and eye protectors should be provided for greater comfort.

The C. P. Hall Co.

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The technical information and suggestions for use contained herein are believed to be reliable, but they are not to be construed as warranties and no patent liability can be assumed.

Section 1 Page

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FILLERS AND REINFORCING AGENTS

EMTAL 41 TALC

EMTAL 41 TALC is an air-floated grade of hydrous magnesium silicate for use as a dusting agent and filler in the manufacture of natural and synthetic rubber and latices. It is often called soapstone.

Typical Analysis

Appearance	Free-flowing powder
Color	White
Odor	None
Magnesium Oxide (MgO), %	31.7
Silicon Dioxide (SiO ₂), %	47.4
Calcium Oxide (CaO), %	0.6
Iron Oxide (Fe ₂ O ₃), %	5.0
Aluminum Oxide (Al ₂ O ₃), %	1.0
Loss on Ignition, %	14.2
Carbon Dioxide (CO ₂), %	9.2
Photovolt Brightness, %	77.0
Oil Absorption (ASTM-D-281-31)	32 - 35.
Oil Absorption (Gardner - Coleman)	45 - 50
pH (Tappi Tent. Std. T-645-M-54)	9.3 - 9.8
Specific Gravity	2.8
Bulking Value:	
lbs./gal.	23.3
Gals./lb.	0.043
Bulk Density: lbs./cu. ft.	
Loose	29
Packed	45
Free Moisture, %, max.	0.5
Particle Shape	Platy
Average Particle Size (microns)	9.0
On 200 Mesh Screen, %	Trace
On 325 Mesh Screen, %	0.15

Application

EMTAL 41 TALC is an inert mineral dusting agent and filler. It does not affect the rate of cure.

Due to its platy nature and excellent slip and coverage, it is a good dusting agent and ingredient of slab dips, release preparations, etc.

EMTAL 41 TALC is also a filler for latex, sponge and foam. It can be added dry since it wets out readily. In sponge, it aids air release.

Package

Multi-walled paper bags

50# Net

Handling and Storage

Store in dry area. Suitable face respirators are recommended to eliminate dust discomfort.

The C. P. Hall Co.



FILLERS AND REINFORCING AGENTS

EMTAL 42 TALC

EMTAL 42 TALC is a dry ground, air-floated, all-purpose grade of hydrous magnesium silicate for use as a filler and dusting agent in the manufacture of natural and synthetic rubber and latices. It is often called soapstone.

Typical Analysis

Appearance	Free-flowing powder
Color	White
Odor	None
Magnesium Oxide (MgO), %	33.3
Silicon Dioxide (SiO ₂), %	37.9
Calcium Oxide (CaO), %	1.0
Iron Oxide (Fe ₂ O ₃), %	6.4
Aluminum Oxide (Al ₂ O ₃), %	0.7
Loss on Ignition, %	20.3
Carbon Dioxide (CO ₂), %	17.5
Photovolt Brightness, %	73
Oil Absorption (ASTM-D-281-31)	29 - 32
Oil Absorption (Gardner - Coleman)	38 - 42
pH (Tappi Tent. Std. T-445-M-54)	9.3 - 9.8
Specific Gravity	2.9
Bulking Value:	
lbs/gal	24.2
gals/lb	0.041
Bulk Density: lbs./cu. ft.	
Loose	39
Packed	68
Free Moisture, %, max.	0.5
Particle Shape	Platy
Average Particle Size (microns)	14.0
On 200 Mesh Screen, %	0.2
On 325 Mesh Screen, %	4.0

Application

EMTAL 42 TALC is an inert mineral dusting agent and filler. It does not affect the rate of cure.

Due to its platy nature and excellent slip and coverage, it is a good dusting agent and ingredient of slab dips, release preparations, etc.

EMTAL 42 TALC is also a filler for latex, sponge and foam. It can be added dry since it wets out readily. In sponge, it aids air release.

Package

Multi-walled paper bags

50# Net

Handling and Storage

Store in dry area. Suitable face respirators are recommended to eliminate dust discomfort.

The C. P. Hall Co.

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FILLERS AND REINFORCING AGENTS

EMTAL 44 TALC

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F. C. SKELTON

EMTAL 44 TALC is a dry ground, somewhat coarser grade of hydrous magnesium silicate of the soft variety sometimes referred to as soapstone.

Typical Analysis

Appearance	Free-flowing powder
Color	White
Odor	None
Magnesium Oxide (MgO), %	33.5
Silicon Dioxide (SiO ₂), %	37.6
Calcium Oxide (CaO), %	0.7
Iron Oxide (Fe ₂ O ₃), %	6.3
Aluminum Oxide (Al ₂ O ₃), %	0.7
Loss on Ignition, %	20.6
Carbon Dioxide (CO ₂), %	17.4
Photovolt Brightness, %	73
Oil Absorption (ASTM-D-281-31)	24 - 27
Oil Absorption (Gardner - Coleman)	14 - 38
pH (Tappi Tent. Std. T-645-M-54)	9.3 - 9.8
Specific Gravity	2.9
Bulking Value:	
lbs./gal	24.2
gal./lbs	0.041
Bulk Density: lbs./cu. ft.	
Loose	44
Packed	78
Free Moisture, %, max.	0.5
Particle Shape	Platy
Average Particle Size (microns)	19.0
On 200 Mesh Screen, %	4.5
On 325 Mesh Screen, %	17.0

Application

EMTAL 44 TALC is a dry ground talc or soapstone. It is recommended for use as a dusting agent and filler for natural and synthetic rubber.

EMTAL 44 TALC does not affect the rate of cure.

Due to its platy nature and excellent slip and coverage, it is a good dusting agent and ingredient of slab dips, release preparations, etc.

Package

Multi-walled paper bags 50# Net

Handling and Storage

Store in dry area. Suitable face respirators are recommended to eliminate dust discomfort.

Note: Please note that EMTAL 44-OT TALC is also available. This is the same talc as EMTAL 44 TALC except that it is oil treated (OT) to reduce dusting and aid in dispersions.

The C. P. Hall Co.



FILLERS AND REINFORCING AGENTS

EMTAL 599 TALC

EMTAL 599 TALC is a fine grind hydrous magnesium silicate produced by a special water floatation process.

Typical Analysis

Appearance	Free-flowing powder
Color	White
Odor	None
Magnesium Oxide (MgO), %	30.7
Silicon Dioxide (SiO ₂), %	58.2
Calcium Oxide (CaO), %	0.3
Iron Oxide (Fe ₂ O ₃), %	3.4
Aluminum Oxide (Al ₂ O ₃), %	0.4
Loss on Ignition, %	6.9
Carbon Dioxide (CO ₂), %	2.0
Photovolt Brightness, %	87
Oil Absorption (ASTM-D-281-31)	44 - 49
Oil Absorption (Gardner - Coleman)	85 - 93
pH (Tappi Tent. Std. T-645-T-54)	9.3 - 9.8
Specific Gravity	2.8
Bulking Value:	
lbs/gal	23.3
gals/lb.	0.043
Bulk Density: lbs./cu. ft.	
Loose	14
Packed	21
Free Moisture, %, max.	0.5
Particle Shape	Platy
Average Particle Size (microns)	2.7
On 325 Mesh Screen, %	0.01

Application

EMTAL 599 TALC is a soft variety of magnesium silicate often called soapstone. It is recommended for use as a filler and dusting agent in natural and synthetic rubber and latices.

EMTAL 599 TALC, when used as a filler, acts as a hardener and stiffener. It does not affect the rate of cure. It is used for bodying, that is, to increase the hardness and weight of the end product.

EMTAL 599 TALC is an excellent filler or loading material for latex, foam and sponge. It can be added dry since it wets out readily. In sponge, it aids air retention.

EMTAL 599 TALC increases the chemical resistance and reduces the thermoplasticity. It is an outstanding filler for butyl rubber. It imparts excellent resilience to butyl sponge.

EMTAL 599 TALC is recommended for use as a filler and dusting agent in the manufacture of floor tiling, sponge, foam, extruded goods, footwear, molded goods, wire and cable, insulations, etc.

Package

Multi-walled paper bags

50# Net

Handling and Storage

Store in a dry area. Suitable face respirators are recommended for elimination of dust discomfort.

The C. P. Hall Co.

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