PLAINTIFF'S EXHIBIT
USG-460

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE Approved:	**CONFIDENTIAL** **DO NOT REPRODUCE OR COPY** USG JOINT COMPOUND ALL PURPOSE (AP-275-B)	No. 61-2-11-3-C Date 10-10-66 Page 3 Cancels Dated NEW

FORMULA	AP-275-B
CEA 216	1.5%
B329	4.0
Gum Arabic (powd.)	.5
Tylose UM 4000 P	.6
Advacide TJP	.1
Dicyandiamide	.7
Mica JC	Per formula V
7RF02 Asbestos	As req'd for consistency control - 2.5% in lab batches
7RF9 "	3.0
Flo Float JF	To make 100%

RAW MATERIALS

Cea 216 - A special starch binder from Hercules Inc.
B 329 - A special starch binder from A. E. Staley Co.
Gum Arabic - #2 sorts ground to pass 60 mesh practially 100%.
Dicyandiamide - Per Bulletin 6-44-1
Tylose UM 4000 P - Per Bulletin 6-25-5
Advacide TJP - A 5% dispersion of tributyl tin oxide on $CaCO_3$ from Carlisle Chemical Works.
Mica JC - Per Bulletin 6-143-1
Asbestos 7RF02 and 7RF9 - Per Bulletin 6-14-5
Flo Float JF - Per Bulletin 6-24-9

MANUFACTURING PROCEDURE

This compound is borate sensitive, hence should be run after AP-100 or other non-borate containing compounds, and then with the equipment well brushed down. Weighing, mixing and Mikropulverising are the same as for other joint compounds.

QUALITY CONTROL

Per 61-2-26 and 61-2-22.

End

USG 006 2153

No. 61-2-11-3-C Date 10-10-66 Page 2 Cancels Dated NEW	USG JOINT COMPOUND ALL PURPOSE (AP-275-B)

FINISHED PRODUCT SPECIFICATIONS

Color - Unpigmented unless pigmented (manila or yellow) is specified on the order.

Consistency - 64 to 67 cc at 525 BB, 75°F, 15 min. after mixing, 75 RPM with pin paddle and 250 cm. gm. torque head in Brabender Viscometer.

pH - 8.6 to 8.9

Bond - 5 minimum when dried at less than 60% R.H.

Mixing and Application - To match standard sample from Research.

Lumps or grit - None permitted.

- 0 -

UP006 2089

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE Approved:	**CONFIDENTIAL** **DO NOT REPRODUCE OR COPY** USG JOINT COMPOUND ALL PURPOSE (AP 247 D)	No. 61-2-11-3-B Date 10-10-66 Page 3 Cancels NEW Dated

FORMULA	AP 247 D
B-329	5.5 %
Gum Arabic	.5
Tylose UM 4000P	.6
Advacide TJP	.1
Dicyandiamide	.7
Mica JC	Per formula V
JM 7EF02 Asbestos	As req'd for consistency, 4.0 % in lab. batches
PC7RF9	3.0
Astrocal M or Equivalent	15.0
Marble White 325	To make 100 %

RAW MATERIALS

All are presently used South Gate raw materials with the exception of:
B-329 - A starch derived adhesive from Staley Mfg. Co., Decatur, Ill. This should be 100% passing 60 mesh as received.

MANUFACTURING PROCEDURE

Processing - This compound is extremely sensitive to casein products containing borates, hence should be run only after J1066 or other non borated compound and then with equipment well brushed down. Weighing, mixing and pulverizing are the same as for other joint compounds.

End

NP004 2140

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE Approved: JJ	**CONFIDENTIAL** **DO NOT REPRODUCE OR COPY** USG JOINT COMPOUND ALL PURPOSE (AP-259A)	No. 61-2-11-3-A Date 10-10-66 Page 3 Cancels Dated NEW

FORMULA (AP-259A)

EW-13	2.0%	
B-329	3.0	
GP-702	1.0	
Gum Arabic No. 2 Tech. Grade	0.2	
Santicizer #9	0.1	
GM-65	0.4	
Zinc Oxide	0.1	
Vancide 51-Z	0.15	
JM7FRO2 Asbestos	4.5	(as required)
Serecite Filler (1)	15.0	
Mica P-85	-	(Per Formula V)
Carbonate Filler (2)	-	(to make 100%)
Ferrite Yellow	-	(ca. 0.1)

(1) New Brighton to use CEF-1, Gypsum to use SER-X
(2) New Brighton to use A Dolomite, Gypsum to use Stonelite.

RAW MATERIALS

A.	EW-13	National Starch and Chemical Corp.
B.	B-329	A. E. Staley Manufacturing Co.
C.	GP-702	Monsanto
D.	Gum Arabic	#2 Tech. Grade.
E.	Santicizer #9	Monsanto
F.	GM-65	Dow Chemical Co.

MANUFACTURING PROCEDURE

Per Bulletin 61-2-26 except a thorough brushing down, followed by a clean-out charge of carbonate filler must be run before this product is made. (No clean-out is necessary afterwards as this product will not contaminate regular casein compounds.)

End

UP006 2116

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE Approved:	**CONFIDENTIAL** **DO NOT REPRODUCE OR COPY** USG JOINT COMPOUND ALL PURPOSE (AP 247 D)	No. 61-2-11-3-B Date 10-10-66 Page 3 Cancels NEW Dated

FORMULA — AP 247 D

B-329	5.5 %
Gum Arabic	.5
Tylose UM 4000P	.6
Advacide TJP	.1
Dicyandiamide	.7
Mica JC	Per formula V
JM 7RF02 Asbestos	As req'd for consistency, 4.0 % in lab. batches
PC7RF9	3.0
Astrocal M or Equivalent	15.0
Marble White 325	To make 100 %

RAW MATERIALS

All are presently used South Gate raw materials with the exception of:
B-329 - A starch derived adhesive from Staley Mfg. Co., Decatur, Ill. This should be 100% passing 60 mesh as received.

MANUFACTURING PROCEDURE

Processing - This compound is extremely sensitive to casein products containing borates, hence should be run only after J1066 or other non borated compound and then with equipment well brushed down. Weighing, mixing and pulverizing are the same as for other joint compounds.

End

NP006 2131

No. 61-2-11-3-B Date 10-10-66 Page 2 Cancels Dated NEW	USG JOINT COMPOUND - ALL PURPOSE (AP 247 D)

FINISHED PRODUCT SPECIFICATIONS

Color	-	Natural White (for field trials). May be pigmented to Manila color if so stated on sales orders.
Consistency	-	65 to 69 cc, Normal 67 cc.
pH	-	9.0 ± .3
Bond to Tape	-	5 minimum when dried at less than 60% R.H.
Application	-	To match standard sample from Research.

- 0 -

NP056 2133

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE Approved:	**CONFIDENTIAL** **DO NOT REPRODUCE OR COPY** USG JOINT COMPOUND - ALL PURPOSE AP-284A	No. 61-2-11-3-D Date 10-11-66 Page 2 Cancels Dated NEW

FORMULA	AP-284A
EN-13	2.0%
B-329	3.0
GP-702	1.0
Gum Arabic No. 2	0.2
Santicizer No. 9	0.1
GM-65	0.4
Zinc Oxide	0.1
Advacide TJP	0.1
Dicyandiamide	1.0
JM 7RF02 Asbestos	As req'd (about 4% in lab)
DXW Mineralite	15.0
P-85 Mica	Formula V
No. 9 HCS	To make 100%

RAW MATERIALS

EN-13	National Starch and Chemical Corp.
B-329	A. E. Staley Mfg. Co.
GP-702	Monsanto
Gum Arabic	Per PMS 6-62-2
Santicizer No. 9	Per PMS 6-98-2
GM-65	Dow Chemical Co.
Zinc Oxide	Per PMS 6-94-91
Advacide TJP	Carlisle Chemical Works
Dicyandiamide	Per PMS 6-44-1
JM 7RF02 Asbestos	Per PMS 6-14-5
DXW Mineralite	Per PMS 6-146-2
P-85 Mica	Per PMS 6-143-3
No. 9 HCS	Per PMS 6-24-9

MANUFACTURING PROCEDURE

Per Bulletin 61-2-26 except that a thorough brushing down, followed by a clean-out charge of carbonate filler must be run before this product is made.

END

NP006 7164

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE Approved:	**CONFIDENTIAL** **DO NOT REPRODUCE OR COPY** USG JOINT COMPOUND ALL PURPOSE (AP-275-B)	No. 61-2-11-3-C Date 4-11-67 Page 3 Cancels Page 3 Dated 10-10-66

FORMULA	AP-275-B
CEA 216	1.5%
B329	4.0
Gum Arabic (powd.)	.5
Tylose UM 4000 P	.6
Advacide TJP	.1
Dicyandiamide	.7
Mica JC	Per formula V
7RF02 Asbestos	As req'd for consistency control - 2.5% in lab batches
7RF9 "	3.0
Flo Float JF	To make 100%

RAW MATERIALS

Cea 216 - A special starch binder from Hercules Inc.
C B 329* - A special starch binder from A. E. Staley Co.
Gum Arabic - #2 sorts ground to pass 60 mesh practially 100%.
Dicyandiamide - Per Bulletin 6-44-1
Tylose UM 4000 P - Per Bulletin 6-25-5
Advacide TJP - A 5% disperaion of tributyl tin oxide on $CaCO_3$ from Carlisle Chemical Works.
Mica JC - Per Bulletin 6-143-1
Asbestos 7RF02 and 7RF9 - Per Bulletin 6-14-5
Flo Float JF - Per Bulletin 6-24-9
A * Raw Material Testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

This compound is borate sensitive, hence should be run after AP-100 or other non-borate containing compounds, and then with the equipment well brushed down. Weighing, mixing and Mikropulverising are the same as for other joint compounds.

QUALITY CONTROL

Per 61-2-26 and 61-2-22.

End

NP004 2150

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE Approved:	**CONFIDENTIAL** **DO NOT REPRODUCE OR COPY** USG JOINT COMPOUND - ALL PURPOSE AP-284A	No. 61-2-11-3-D Date 4-11-67 Page 2 Cancels Page 2 Dated 10-11-66

FORMULA	AP-284A
EN-13	2.0%
B-329	3.0
GP-702	1.0
Gum Arabic No. 2	0.2
Santicizer No. 9	0.1
GM-65	0.4
Zinc Oxide	0.1
Advacide TJP	0.1
Dicyandiamide	1.0
JM 7EF02 Asbestos	As req'd (about 4% in lab)
DXW Mineralite	15.0
P-85 Mica	Formula V
No. 9 HCS	To make 100%
Ferrite Yellow	(approx. 0.1 as required)

RAW MATERIALS

C	EN-13 *	National Starch and Chemical Corp.
C	B-329 *	A. E. Staley Mfg. Co.
	GP-702	Monsanto
	Gum Arabic	Per PMS 6-62-2
	Santicizer No. 9	Per PMS 6-98-2
C	GM-65*	Dow Chemical Co.
	Zinc Oxide	Per PMS 6-94-91
	Advacide TJP	Carlisle Chemical Works
	Dicyandiamide	Per PMS 6-44-1
	JM 7EF02 Asbestos	Per PMS 6-14-5
	DXW Mineralite	Per PMS 6-146-2
	P-85 Mica	Per PMS 6-143-3
	No. 9 HCS	Per PMS 6-24-9

A * Raw Material Testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

Per Bulletin 61-2-26 except that a thorough brushing down, followed by a clean-out charge of carbonate filler must be run before this product is made.

END

AP004 2162

USG JOINT

COMPOUND - ALL PURPOSE (AP-259A)

FINISHED PRODUCT SPECIFICATIONS

A. Consistency - 63 cc to 67 cc (65 cc normal) for 530 ± 30 VC-3, Brabender.

B. pH - 8.0 to 8.4 (8.2 normal) 15 mins. after mixing.

C. Bond - 4 minimum - must be dried 24 hours at 75°F, 50% R. H. Do not dry in hot room or oven.

C D. Color - Natural or pigmented to match SHEETROCK.

- 0 -

C Indicates Change

AP006 2103

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE Approved:	USG JOINT COMPOUND - ALL PURPOSE AP-284A	No. 61-2-11-3-D Date 4-11-67 Page 1 Cancels Page 1 Dated 10-11-66

This bulletin expires 4-15-67.

DESCRIPTION

Chamblee to manufacture a new non-casein - all purpose joint compound, AP-284A, for field trials and initial shipment per instructions from Dept. #147-2.

IDENTIFICATION AND PACKAGING

Bags per bulletin 7-16-11-3 or plain bags with USG Joint Compound directional labels affixed to back of bag.

FINISHED PRODUCT SPECIFICATIONS

Consistency:	63 - 67 cc (65cc normal) to give 530 Brabender (VC-3).
pH:	8.0 - 8.4 (8.2 normal) 15 minutes after mixing.
Bond:	4 minimum - must be dried 24 hours at 75 F - 50% R.H. Do not dry in hot room or oven.
C Color:	Natural.

- 0 -

UP006 2161

C Indicates Change

USG JOINT

COMPOUND - ALL PURPOSE (AP-259A)

FINISHED PRODUCT SPECIFICATIONS

A. Consistency - 62 cc to 67 cc (65 cc normal) for 530 ± 30 VC-3, Brabender.

B. pH - 8.0 to 8.4 (8.2 normal) 15 mins. after mixing.

C. Bond - 4 minimum - must be dried 24 hours at 75°F. 50% R. H. Do not dry in hot room or oven.

C D. Color - Natural or pigmented to match SHEETROCK.

- 0 -

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG JOINT COMPOUND ALL PURPOSE (AP 247 D)	No. 61-2-11-3-B Date 4-11-67 Page 3 Cancels Page 3 Dated 10-10-66

FORMULA	AP 247 D
B-329	5.5 %
Gum Arabic	.5
Tylose UM 4000P	.6
Advacide TJP	.1
Dicyandiamide	.7
Mica JC	Per formula V
JM 7RF02 Asbestos	As req'd for consistency, 4.0 % in lab. batches
PC7RF9	3.0
Astrocal M or Equivalent	15.0
Marble White 325	To make 100 %

RAW MATERIALS

All are presently used South Gate raw materials with the exception of:

C B-329*- A starch derived adhesive from Staley Mfg. Co., Decatur, Ill. This should be 100% passing 60 mesh as received.

A * Raw Material Testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

Processing - This compound is extremely sensitive to casein products containing borates, hence should be run only after J1066 or other non borated compound and then with equipment well brushed down. Weighing, mixing and pulverizing are the same as for other joint compounds.

End

OP006 2120

Operating Division PRODUCT PROCEDURE Approved:	USG READY MIXED JOINT COMPOUND - ALL PURPOSE	No. 61-2-24-1 Date 5-1-67 Page 1 Cancels Page 1 Dated 4-13-67

DESCRIPTION

A resin-emulsion base, ready-mixed joint compound, with a package life of one year.

MANUFACTURING PLANT

Chamblee

PRODUCT LINE

A. USG Ready Mixed Joint Compound - All Purpose.

B. Ames Consistency

A USG Ready Mixed Joint Compound - All Purpose at an Ames Tool Consistency of 375-425 Brabender units, at 77°F, by diluting with extra water.

IDENTIFICATION AND PACKAGING

A. 1 Gallon Can

Per PMS 8-15-2. Master carton per PMS 8-10-26 or PMS 8-10-27. Label as directed by 147-2.

B. 5 Gallon Pail

Per PMS 8-29-3.

C. 5 Gallon Carton

Per PMS 8-10-17 with liner per PMS 8-5-4.

D. 100' System

Two gallon cans per PMS 8-15-12 of compound packed with a 100' roll of PERF-A-TAPE on top of each can. Master carton per PMS 8-10-16. Label as directed by 147-2. Two (2) WB-34 folders to be included in each master carton.

UP009 1402

Operating Division PRODUCT PROCEDURE Approved:	USG READY-MIXED JOINT COMPOUND ALL PURPOSE SOUTH GATE	No. 61-2-24-4 Date 5-1-67 Page 1 Cancels Page 1 Dated 5-11-65

DESCRIPTION

A resin-emulsion base, ready-mixed joint compound.

MANUFACTURING PLANT

South Gate

IDENTIFICATION AND PACKAGING

A. Packaging

1. 1 Gallon Can

Per PMS 8-15-12. Master carton per PMS 8-10-26 or PMS 8-10-27. Label as directed by 147-2.

2. 5 Gallon Pail

Per PMS 8-29-3.

3. 5 Gallon Carton

Per PMS 8-10-17. Liner per PMS 8-5-4.

4. 100' System

Two gallon cans per PMS 8-15-12 of compound packed with a 100' roll of Perf-A-Tape on top of each can. Master carton per PMS 8-10-16. Label as directed by 147-2. Two (2) WB-34 folders to be included in each master carton.

B. Identification

1. Containers to be labeled as directed by Dept. 147-2. Formula JE-304C to have "Special White" stamped conspicuously on the containers.

2. Coding for JE-304C

The letters "TC" to replace "SG" in the code for Thin Consistency compound, and the letters "HC" to replace "SG" in the code for Heavy Consistency Compound.

JP009 1732

Contains material formerly on page 1, dated 5-11-65

No. 61-2-24-4 Date 5-1-67 Page 2	USG READY-MIXED JOINT COMPOUND ALL PURPOSE SOUTH GATE
Cancels Page 2 Dated 5-11-65	

FINISHED PRODUCT SPECIFICATIONS

Viscosity - Formula JE-304C

1. Thin Consistency (TC) Brabender of 585-635
2. Regular Consistency Brabender of 640-690
3. Heavy Consistency (HC) Brabender of 750-800

- 0 -

NP009 1742

C

FORMULAS

A. Formula JE-304C - Special White and Regular (Tinted)

Fillers	% Non-Volatile	(for 250 gal.) Lbs. (batch approx.)
Mica JC	Formula V	275 (Approx.)
DXW Mineralite	10.0	200
Asbestos PC7RF9	3.5	70
#400 Whiting or Marble White 325	To make 94%	To make 1880 lbs.
Methocel 65HG	0.8	16

Paste Mix	% Non-Volatile	Lbs. (for 250 gal batch appr)
Fillers	94.0	1880
Plast. WC-130	6.0*	218
Carbitol	-	19
PMA-30	-	1
Water	-	140 gallons (approx.)

*Contains 5.4% WC-130 solids and 0.6% dibutyl phthalate.

B. Formula JE-201

Filler Mix	% Non-Volatile	Lbs. (for 945# Filler Charge)
Mica JC	Formula V	150 approx
MTO-50	30.0	300
Asbestos Floats	As req'd	35 approx
Huber Clay	10.0	100
Methocel HG	0.8	8
Ferrite Yellow	To match manila color of Sheetrock Face Paper	
400 Whiting or Marble White 325	To make 94.5%	To make up 945 lbs.

**Plant to manufacture unpigmented form when requested by Sales Dept.

Paste Mix	% Non-Volatile	Lbs. (for approx. 130 gal.)
Fillers	94.5	945
Plasticized WC-130*	5.5	96
Carbitol	-	9
PMA Preservative	-	4 oz.
Water	-	71 gal. approx.

*Contains 5.0% WC-130 solids and 0.5% dibutyl phthalate.

OP009 1743

Rearrangement
and C Indicates Change

No. 61-2-24-4 Date 5-1-67 Page 4 Cancels Page 4 C Dated 5-11-65	**CONFIDENTIAL** DO NOT REPRODUCE OR COPY USG READY-MIXED JOINT COMPOUND ALL PURPOSE SOUTH GATE

RAW MATERIALS

Resin	Per P.M.S. Bulletin	6-104-17
Methocel HG		6-25-6
Dibutyl Phthalate		6-98-1
Solvent		6-149-3
P8CF Mica		6-143-1
DXW Mineralite		6-146-2
Ser-X		6-146-2
Asbestos		6-14-5
#400 Whiting or Marble White 325		6-24-1
Stonelite		6-24-2
Nuodex PMA-18		6-100-2
Huber CWF Clay		6-36-5
Troysan PMA-30		6-100-3
M350 and MTO-50 Sericite		6-146-2
A Dolomite	Per Bulletin	58-2-2
Astracal M Sericite	Per PMS bulletin	6-164-2

MANUFACTURING PROCEDURE

Emulsion Plasticization for Formula JE-304C: The Bakelite WC-130 emulsion as supplied has an average of 56% solid, dispersed, p.v.ac. resin. Stir into the emulsion 5-1/2 lbs. of water (exactly 5 pints, 4-1/2 oz.) per 100 lbs. of WC-130 to reduce the solids to 55%. Next, weigh the drum of emulsion (plus added water) and determine net weight of the diluted emulsion. Fifty-five per cent of this weight is the weight of the p.v.ac. solids present. The amount of dibutyl phthalate to use is simply 10% of the p.v.ac. solids weight. This will be 5.5 lbs. of dibutyl phthalate per 100 lbs. of diluted WC-130 emulsion. The dibutyl phthalate is then poured slowly into the Bakelite WC-130 while the latter is being stirred with a suitable high speed mixer, i.e., a "Lightnin Mixer". The stirring should continue for a minimum of 20 minutes after all the dibutyl phthalate has been added. The temperature of the dibutyl phthalate and WC-130 must be above 65°F for this operation.

Rearrangement and C Indicates Change

NP009 1744

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG READY MIXED JOINT COMPOUND ALL PURPOSE SOUTH GATE	No. 61-2-24-4 Date 5-1-67 Page 5 Cancels Page 5 Dated 5-11-65

MANUFACTURING PROCEDURE (Cont'd)

Mixing Procedure on Hockmeyer Mixer:
Approximately 90% of the total amount of water that will be required is put into the Hockmeyer mixer. (The quantity of water used initially should be the smallest amount which can be used without overloading the motor when the dry materials are added). The Carbitol and PMA-30 are then added and the mixer is run for a few turns to disperse these materials. The dry materials and plasticized emulsion are then added and the batch is mixed until all lumps are broken down and all materials thoroughly mixed. The mixer is then turned off and the viscosity of a sample is determined on a Brabender viscosimeter. Additional water, as required, is then added and the batch mixed until a smooth, homogeneous mixture is obtained. The mixer is then stopped and another sample is checked on the viscosimeter. If the viscosity is still too high, this procedure is repeated until the proper viscosity is reached.

Filling
All 5 gallon containers are to be filled by weight, based on the weight per gallon of each batch.

QUALITY CONTROL

A. Viscosity

1. Compound to be at 77°F ± 5°F in a standard 1/2 pint paint can with paddle immersed to mark on paddle stem.

2. Can spindle to rotate 75 RPM on VC-3, 250 gm. cm. head, Brabender Viscometer.

3. Pin bladed paddle to be used in the Brabender.

B. Application Properties - To match standard sample from Research.

C. Grit - None

D. Bond to Perf-A-Tape - Applied and dried at 70 - 80°F, 40 - 60% R.H. - 4 min.

E. Rewet Test - 2 normal.

F. Tape Edge Cracking or Check-Cracking - (in bond test application) None

G. Color - Formula JE-304C to match the color of Research standard (Natural White) or the color of Sheetrock manila face paper (tinted).

H. Odor - Characteristic

Note - These tests to be performed in the same manner as used for dry powder Perf-A-Tape Compound. See Bulletin 61-2-22.

End

DP009 1745

Operating Division PRODUCT PROCEDURE Approved:	USG READY MIXED JOINT COMPOUND - ALL PURPOSE	No. 61-2-24 Date 5-1-67 Page 1 Cancels Page 1 Dated 11-29-66

DESCRIPTION

A resin-emulsion base, USG Ready Mixed Joint Compound - All Purpose, with a package life of one year.

MANUFACTURING PLANTS

New Brighton and Gypsum.

"Heavy Consistency" on orders approved by 147-2 for full batch (250 Gals.) or multiples thereof.

IDENTIFICATION AND PACKAGING

A. 1 Gallon Can

Per PMS 8-15-12. Master carton per PMS 8-10-26 or PMS 8-10-27. Label as directed by 147-2.

B. 5 Gallon Pail

Per PMS 8-29-3.

C. 5 Gallon Carton

Per PMS 8-10-17 with liner per PMS 8-5-4.

D. 100' System

Two gallon cans per PMS 8-15-12 of compound packed with a 100' roll of Perf-A-Tape on top of each can. Master carton per PMS 8-10-16. Label as directed by 147-2. Two (2) WB-34 folders to be included in each master carton.

E. Gypsum Only

4 Gallon Carton - Per PMS 8-10-29. Liner per PMS 8-5-4. For shipment into Milwaukee District or as directed by 147-2.

DPC09 0511

C	No. 61-2-24 Date 5-1-67 Page 2	USG READY MIXED JOINT COMPOUND
	Cancels Page 2 Dated 10-4-66	ALL PURPOSE

FINISHED PRODUCT SPECIFICATIONS

Viscosity - 600 ± 30 units

Color - To match color of SHEETROCK Manila face paper.
Natural white color to be made when specified.

Ames Consistency Only - 400 ± 25 units at 77°F.

Heavy Consistency Only- 665 ± 25 units.

- 0 -

DP009 0532

C Indicates Change

Operating Division PRODUCT PROCEDURE Approved: J.F.	**CONFIDENTIAL** **DO NOT REPRODUCE OR COPY** USG READY MIXED JOINT COMPOUND - ALL PURPOSE	No. 61-2-24 Date 5-1-67 Page 3 Cancels Page 3. Dated 10-4-66

FORMULA JE186A

Filler Mix:	% Non-Volatile	lbs. (For 945 lbs. filler charge)
Mica JC	(2/3 For. V)	100 approx.
Ser-X	30.0	300
Asbestos Floats	(as Required)	35 approx.
Huber Clay	10.0	100
Methyl Cellulose	0.6	6
Ferrite Yellow	(to match the manila color of Sheetrock face paper)	
A Dolomite (or Stonelite)	(to make 94.5%)	(to make up 945 lbs.)

Paste Mix:	% Non-Volatile	lbs. (For approx. 130 gal. batch)
Fillers	94.5	945
Plasticized WX-130 **	5.5	96
Carbitol	-	9
PMA Preservative	-	6 oz.
Water	-	66 gal. approx.

** Contains 5.0 WC-130 solids and 0.5 Dibutyl Phthalate.

DP009 9513

CONFIDENTIAL

DO NOT REPRODUCE OR COPY

USG READY MIXED JOINT COMPOUND
ALL PURPOSE

FORMULA: (Cont'd)

Formula JE-295C - Gypsum only

Fillers	% Non-Volatile	lbs. (For 250 gal batch approx.)
Mica JC	Formula V	270 approx.
Ser-X	15.0	300
JM-7RF9 Asbestos	(as required)	60 approx.
Methyl Cellulose	0.8%	16
Stonelite (or A-Dolomite)	to make 94.0%	to make 1880 lbs.
Ferrite Yellow	to match Sheetrock Paper	

Paste Mix	% Non-Volatile	lbs. (for 250 gal. batch approx)
Fillers	94.0	1880
Plast. WC-130	6.0*	218
Carbitol	-	19
PMA-30	-	1.0
Water	-	130 gal. (approx.)

* (Contains 5.4% WC-130 solids and 0.6% dibutyl phthalate)

RAW MATERIALS:

Resin	Per PMS Bul. 6-104-17
Methyl Cellulose	6-25-5, 6-25-6
Dibutyl Phthalate	6-98-1
Solvent	6-149-3
Mica	6-143-1
Sericite	6-146-2
Asbestos Floats	6-14-5
Carbonate Filler	6-24-1, 6-24-2, 6-24-7, 58-2-2
PMA Preservative	6-100-2, 6-100-3
Clay	6-36-5

MANUFACTURING PROCEDURE

A. Emulsion Plasticization: The Bakelite WC-130 emulsion as supplied has an average of 58% solid, dispersed, p.v.ac. resin. Stir into the emulsion 5-1/2 lbs. of water (exactly 5 pints, 4-1/2 oz.) per 100 lbs. of WC-130 to reduce the solids to 55%. Next, weigh the drum of emulsion (plus added water) and determine net weight of the diluted emulsion. Fifty-five per cent of this weight is the weight of the p.v.ac. solids present. The amount of dibutyl phthalate to use is simply 10% of the p.v.ac. solids weight. This will be 5.5 lbs. of dibutyl phthalate per 100 lbs. of diluted WC-130 emulsion. The dibutyl phthalate is then poured slowly into the Bakelite WC-130 while the latter is being stirred with a suitable high speed mixer, i.e., a "Lightnin Mixer". The stirring should continue for a minimum of 20 minutes after all the dibutyl phthalate has been added. The temperature of the dibutyl phthalate and WC-130 must be above 65°F for this operation.

DPCC9 05 14

C

MANUFACTURING PROCEDURE (Cont'd)

B. Mixing Procedure on Hockmeyer Mixer:
Approximately 90% of the total amount of water that will be required is put into the Hockmeyer mixer. (The quantity of water used initially should be the smallest amount which can be used without overloading the motor when the dry materials are added). The Carbitol and PMA-30 are then added and the mixer is run for a few turns to disperse these materials. The dry materials and plasticized emulsion are then added and the batch is mixed until all lumps are broken down and all materials thoroughly mixed. The mixer is then turned off and the viscosity of a sample is determined on a Brabender viscosimeter. Additional water, as required, is then added and the batch mixed until a smooth, homogeneous mixture is obtained. The mixer is then stopped and another sample is checked on the viscosimeter. If the viscosity is still too high, this procedure is repeated until the proper viscosity is reached.

C. Filling
All 5 gallon containers are to be filled by weight, based on the weight per gallon of each batch.

AMES CONSISTENCY

C Plants to manufacture USG Ready Mixed Joint Compound-All Purpose at an Ames Tool Consistency of 300 ± 20 Brabender units, at 77°F, by diluting with extra water.

QUALITY CONTROL:

Viscosity: To be determined after the compound has stood for 24 hours, using the following set-up.

(a) Compound to be at 77°F ± 5°F in a standard 1/2 pint paint can with paddle immersed to mark on paddle stem.

(b) Can spindle to rotate 75 R.P.M. on VC-3, 250 gm. cm. head, Visco Corder.

(c) Pin Bladed paddle to be used.

TPCC 0535

C

CONFIDENTIAL
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USG READY MIXED JOINT
COMPOUND - ALL PURPOSE

QUALITY CONTROL (Cont'd)

Application Properties: To match standard sample from Research

Grit: None

Bond to Perf-A-Tape: Applied and dried at 70 - 80° F, 40 - 60% R.H. - 4 min.

Rewet Test: 2 normal

Tape Edge Cracking or Check-Cracking: (in bond test application) - none

Odor: Characteristic

NOTE: These tests to be performed in the same manner as used for dry powder Perf-A-Tape compound - See Bulletin 61-2-22.

End

C Indicates Change

USDC0 0577

Operating Division PRODUCT PROCEDURE Approved: JCP	USG READY MIXED JOINT COMPOUND - ALL PURPOSE DALLAS	No. 61-2-24-2 Date 5-1-67 Page 1 Cancels Page 1 Dated 8-13-65

DESCRIPTION

A resin-emulsion base, ready mixed joint compound.

MANUFACTURING PLANT

Dallas

PRODUCT LINE

USG Ready Mixed Joint Compound-All Purpose

IDENTIFICATION AND PACKAGING

A. 1 Gallon Can

Per PMS 8-15-12. Master carton per PMS 8-10-26 or PMS 8-10-27. Label as directed by 147-2.

B. 5 Gallon Pail

Per PMS 8-29-3.

C. 5 Gallon Carton

Per PMS 8-10-17. Liner per PMS 8-5-4.

D. 5 Gallon Pumpable Carton

Per PMS 8-10-17-1. To be shipped on orders specifiying "pumpable" cartons as authorized by 147-2. Plastic plate to be glued on bottom of carton interior with Arabol adhesive VPR-25 or equal.

E. 100' System

Two gallon cans per PMS 8-15-12 of compound packed with a 100' roll of Perf-A-Tape on top of each can. Master carton per PMS 8-10-16. Label as directed by 147-2. Two (2) WB-34 folders to be included in each master carton.

DP009 1466

C	No. 61-2-24-2 Date 5-1-67 Page 2	USG READY MIXED JOINT COMPOUND — ALL PURPOSE DALLAS
	Cancels Page 2 Dated 7-23-63	

FINISHED PRODUCT SPECIFICATIONS

A. Viscosity: To be 550 - 600 twenty four hours after manufacture at 77°F. Test conditions - std 1/2 pint can size container, VC-3 Brabender at 75 RPM, standard pin paddle, 250 cgm spring suspension (calibrated, and corrected if necessary to match Research VC-3 Brabender Viscometer.

For orders to be used with mechanical tools the ready mixed compound is to be thinned to 360 to 390 VC-3 Brabender (at 75 RPM) by adding extra water.

On orders specifying "Extra Heavy" from Kansas City District, or other districts if approved by Dept. 147-2, plant to manufacture and ship Extra Heavy Viscosity Ready Mixed P.A.T. Compound (CC 2689). Viscosity 730 ± 30 Brabender units 24 hours after mixing. Viscosity to be obtained by using a less than normal volume of water.

B. Color: Manila, to approximately match Sheetrock paper color when dry.

C. Application: To match standard sample (as supplied by Research.)

D. Bond to Tape: 5 minimum at 77° 50% RH. If a bond less than 5 is obtained retest using another roll of tape. If bond is again below 5, reject the compound for poor bond. If the second test is ok, the poor first test may indicate poor bonding tape, (i.e., tape inadequately sanded on the back side to insure good bond. Such tape should also be rejected for shipment.)

E. Grit and Lumps: None permitted. For routine tests spread to a fine feathered edge on Sheetrock using a broadknife or trowel. For a more critical test dilute the compound to about 250 BB, and spread it on Sheetrock with a 10" or 12" Ames finishing box tool, using a tight crown setting on the tool (#4 or #5 setting).

F. Tape edge cracking or check cracking: Observe the dried bond test application for cracking (use a hand lens). There should be no cracking.

G. Weight per Gallon: Mark the exact height of 5 gal. on a 5 gal. can. Fill the can exactly to this mark with the compound and weigh contents. Divide weight obtained by 5. It should be between 12.6 and 12.9 lbs. per gal. A lower weight indicates excessive air entrainment.

- 0 -

DP009 1457

Operating Division PRODUCT PROCEDURE C Approved: J.B.	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG READY MIXED JOINT COMPOUND - ALL PURPOSE - DALLAS	No. 61-2-24-2 Date 5-1-67 Page 3 Cancels Page 3 Dated 8-13-65

FORMULA: JE 320F

	% Non Volatile	lbs. for 260 gal. batch (2000 lbs. non volatile)
Mica JC	(1.2 formula V)	320 to 350 approximately
Carey 7RF9 asbestos	As req'd for correct BB and water content	70 to 90 approximately
Carbonate Filler	To make 100% N.V.	To make up 2000 lbs. non volatile (about 1400 - 1500 lbs)
Methocel	0.8%	16 lbs.
Plasticized WC 130 emulsion, including PMA	6.05% (5.5% WC 130 solids, .55% dibutyl phthalate and 1.2 lb. PMA per 211 lbs. plasticized emulsion)	212.2 lbs.
Carbitol (or equivalent)	- --	18 lbs.
Water	----	155 ± 1 gal.
Pigment	----	As req'd for std. manila color.

RAW MATERIALS

	per bul.
Mica	6-143-1
Asbestos	6-14-5
Carbonate Filler	6-24-9
Methocel	6-25-6
WC-130	6-104-17
Carbitol	6-149-3
Dibutyl Phthalate	6-98-1
PMA-18 or	6-100-2
PMA-30	6-100-3
Ferrite Yellow Pigment	6-94-?

DP009 1469

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USG READY MIXED JOINT COMPOUND - ALL PURPOSE
DALLAS

MANUFACTURING PROCEDURE

A. Emulsion Plasticization: Bakelite WC-130 Emulsion as supplied nominally contains 58% solids. The exact per cent solids is determined by drying a weighed sample. To minimize skinning tendencies, the emulsion should be diluted to 55% solids as the first step in the manufacturing process. The amount of water to add may be calculated from the following formula:

$$\text{lbs. added water} = \frac{WC}{55} - W$$

Where W = The weight in lbs. of the emulsion to be diluted,
and C = Actual per cent solids before dilution.

For 200 lbs. of emulsion as supplied 11 lbs. water will be required when the initial per cent solids is 58.0. The amount of dibutyl phthalate to be used is 11 lbs. per 200 lbs. of the diluted emulsion, or 10% of the weight of the non-volatile WC-130 emulsion solids present. The dibutyl phthalate is poured slowly into the diluted emulsion while the latter is stirred with a suitable high speed mixer, i.e., a "Lightnin Mixer". The temperature of the dibutyl phthalate and of the diluted WC-130 must be above 65° F for this operation. Following the dibutyl phthalate addition PMA 30 (or PMA 18) is added at the rate of 1.2 lbs. per 211 lbs. of the 55% WC 130 emulsion. It is added in the same manner as the dibutyl phthalate. The stirring should continue for a minimum of 20 minutes after all the dibutyl phthalate, and the PMA is added.

B. Compound Mixing: Note - Be sure there is sufficient Ready Mixed Compound from the previous batch left around the outlet gate to insure a water tight seal.

1. Run approx. 100 gal. of water into the mixer and add the Carbitol. Mix 1/4 minute. Check a teaspoon of the emulsion with a drop of diphenyl carbazone - gives an intense purple color if the PMA is present. If OK add the emulsion to the mixer.

2. Start the mixer and add the weighed dry powder ingredients. Mix for ten minutes after completing the addition of the dry materials.

UPOC9 1459

C Indicates Change

Also cancels page 6, dated 1-8-65

Operating Division	CONFIDENTIAL	No. 61-2-24-2
PRODUCT PROCEDURE	DO NOT REPRODUCE OR COPY	Date 5-1-67
		Page 5
C Approved:	USG READY MIXED JOINT COMPOUND - ALL PURPOSE - DALLAS	Cancels Page 5 Dated 5-8-64

MANUFACTURING PROCEDURE (Cont'd)

B. Compound Mixing (Cont'd)

3. If at the end of this time the batch is too stiff, up to 2 gal. more water may be added to bring it to consistency; if too thin, up to 20 lbs. more asbestos may be added to stiffen it. Mixing is continued after completing such additions for at least 5 minutes, then the viscosity of the batch is checked. If satisfactory the compound is ready for packing for shipment. If the viscosity is outside the permissible consistency range following the maximum permissible addition of water, or of asbestos, the batch should be reconditioned by working it off in succeeding batches.

Note: The viscosity of the compound and to some degree the application properties are affected by the total mixing time given the batch. Hence when the best mixing procedure is worked out at the plant it should be closely adhered to in succeeding batches (i.e., the temperature of wet mix, and the total mixing time given the batch prior to packing should both be closely controlled.) During packing the mixer should be on for the minimum possible time to minimize product viscosity difference from the first to the last cans packed.

D

End

GP009 1470

C Indicates Change
D Indicates Deletion

Originally issued 10-11-66. SPECIAL BULLETIN 1st Extension

Operating Division PRODUCT PROCEDURE Approved:	USG JOINT COMPOUND - ALL PURPOSE AP-284A	No. 61-2-11-3-D Date 6-7-67 Page 1 Cancels Page 1 Dated 4-11-67

C This bulletin expires 10-15-67.

DESCRIPTION

Chamblee to manufacture a new non-casein - all purpose joint compound, AP-284A.
C This compound is not to be shipped into the Florida market.

IDENTIFICATION AND PACKAGING

Bags per bulletin 7-16-11-3 or plain bags with USG Joint Compound directional labels affixed to back of bag.

FINISHED PRODUCT SPECIFICATIONS

Consistency:	63 - 67 cc (65cc normal) to give 530 Brabender (VC-3).
pH:	8.0 - 8.4 (8.2 normal) 15 minutes after mixing.
Bond:	4 minimum - must be dried 24 hours at 75 F - 50% R.H. Do not dry in hot room or oven.
Color:	Natural.

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NP006 7159

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG JOINT COMPOUND - ALL PURPOSE AP-284A	No. 61-2-11-3-D Date 6-7-67 Page 2 Cancels Page 2 Dated 4-11-67

FORMULA	AP-284A
BN-13	2.0%
B-329	3.0
GP-702	1.0
Gum Arabic No. 2	0.2
Santicizer No. 9	0.1
GM-65	0.4
Zinc Oxide	0.1
Advacide TJP	0.1
Dicyandiamide	1.0
JM 7RF02 Asbestos	As req'd (about 4% in lab)
DXW Mineralite	15.0
P-85 Mica	Formula V
No. 9 NCS	To make 100%
Ferrite Yellow	(approx. 0.1 as required)

RAW MATERIALS

C	BN-13 *	National Starch and Chemical Corp.**
C	B-329 *	A. E. Staley Mfg. Co.**
C	GP-702	Per PMS 6-104-18-1
	Gum Arabic	Per PMS 6-62-2
	Santicizer No. 9	Per PMS 6-98-2
C	GM-65*	Dow Chemical Co. **
	Zinc Oxide	Per PMS 6-94-91
C	Advacide TJP	Carlisle Chemical Works**
	Dicyandiamide	Per PMS 6-44-1
	JM 7RF02 Asbestos	Per PMS 6-14-5
	DXW Mineralite	Per PMS 6-146-2
	P-85 Mica	Per PMS 6-143-3
	No. 9 NCS	Per PMS 6-24-9

* Raw Material Testing Procedures per PMS 12-45.

A ** The lack of PMS for these items has prevented the establishment of this bulletin on a permanent basis. Upon establishment of the necessary PMS, this bulletin may be issued on a permanent basis.

MANUFACTURING PROCEDURE

Per Bulletin 61-2-26 except that a thorough brushing down, followed by a clean-out charge of carbonate filler must be run before this product is made.

END

M-8971-C Rev. 9/65 (Printed in U.S.A.) C Indicates Change A Indicates Addition

DP006 2160

Originally issued 10-10-66 SPECIAL BULLETIN 1st Extension

Operating Division PRODUCT PROCEDURE Approved:	USG JOINT COMPOUND ALL PURPOSE (AP-259A)	No. 61-2-11-3-A Date 6-27-67 Page 1 Cancels Page 1 Dated 10-10-66

C This Bulletin expires 3-1-68.

DESCRIPTION

Non Casein All-Purpose Joint Compound (AP-259A). Shipment as directed by Department 147-2.

MANUFACTURING PLANTS

Gypsum and New Brighton

PRODUCT LINE

Joint Compound

IDENTIFICATION AND PACKAGING

Per Bulletin 7-16-11-3.

A New Brighton Only - Premixed paste to be packaged in unlithographed 5 gallon cans per PMS 8-29-3 and labelled with a gummed sticker of design and type to be approved by Chicago Corporate Marketing.

Manufacturing code to be applied in normal manner.

Plant to ship ATM (Ames Tool Mix) Ready Mixed material only to accounts approved by Product Manager, Eastern Construction Products Division.

UP006 2109

C Indicates Change
A Indicates Addition

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE Approved: JB	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG JOINT COMPOUND ALL PURPOSE (AP-259A)	No. 61-2-11-3-A Date 6-27-67 Page 3 Cancels Page 3 Dated 4-11-67

FORMULA (AP-259A)

EN-13	2.0%	
B-329	3.0	
GP-702	1.0	
Gum Arabic No. 2 Tech. Grade	0.2	
Santicizer #9	0.1	
GM-65	0.4	
Zinc Oxide	0.1	
Vancide 51-Z	0.15	
JM7FR02 Asbestos	4.5	(as required)
Serecite Filler (1)	15.0	
Mica P-85	-	(Per Formula V)
Carbonate Filler (2)	-	(to make 100%)
Ferrite Yellow	-	(approx. 0.1 as required)

(1) New Brighton to use CEF-1, Gypsum to use SER-X
(2) New Brighton to use A Dolomite, Gypsum to use Stonelite.

RAW MATERIALS

A.	EN-13*	National Starch and Chemical Corp.
B.	B-329*	A. E. Staley Manufacturing Co.
C.	GP-702	Monsanto
D.	Gum Arabic	#2 Tech. Grade.
E.	Santicizer #9	Monsanto
F.	GM-65*	Dow Chemical Co.

* Raw Material Testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

Per Bulletin 61-2-26 except a thorough brushing down, followed by a clean-out charge of carbonate filler must be run before this product is made. (No clean-out is necessary afterwards as this product will not contaminate regular casein compounds.)

A New Brighton Only

Also as a wet Ready Mixed Paste following procedure Part B. of Bulletin 61-2-24, Page 5 with suitable variation as determined by plant to produce a smooth homogeneous paste with properties equal to or superior to job mixed AP 259A Dry Powder. Plant to determine best order of addition and mixing of ingredients. Finished viscosity to be 375 ± 20 tested as per Bulletin 61-2-24 P5, and plant to request revision in 60 days to incorporate manufacturing and quality control information into Bulletin 61-2-11-3-A.

End

Operating Division PRODUCT PROCEDURE Approved: JC	USG READY MIXED JOINT COMPOUND - ALL PURPOSE	No. 61-2-24-1 Date 6-29-67 Page 1 Cancels Page 1 Dated 5-1-67

DESCRIPTION

A resin-emulsion base, ready-mixed joint compound, with a package life of one year.

MANUFACTURING PLANT

Chamblee

PRODUCT LINE

A. USG Ready Mixed Joint Compound - All Purpose.

B. Ames Consistency

A USG Ready Mixed Joint Compound - All Purpose at an Ames Tool Consistency of 375-425 Brabender units, at 77°F, by diluting with extra water.

A C. Heavy Consistency

On special order only. Brabender range to be 675-725. Cans to be marked "Heavy".

A D. Special Ames Consistency

Brabender to be on the high side of the Ames range. Cans will not be marked special for customers who use this for hand application.

IDENTIFICATION AND PACKAGING

A. 1 Gallon Can
Per PMS 8-15-2. Master carton per PMS 8-10-26 or PMS 8-10-27. Label as directed by 147-2.

B. 5 Gallon Pail
Per PMS 8-29-3.

C. 5 Gallon Carton
Per PMS 8-10-17 with liner per PMS 8-5-4.

D. 100' System
Two gallon cans per PMS 8-15-12 of compound packed with a 100' roll of PERF-A-TAPE on top of each can. Master carton per PMS 8-10-16. Label as directed by 147-2. Two (2) WB-34 folders to be included in each master carton.

TP009 1131

A Indicates Addition

Originally Issued 10-10-66 SPECIAL BULLETIN 1st Extension

Operating Division PRODUCT PROCEDURE Approved:	USG JOINT COMPOUND - ALL PURPOSE (AP-275-B)	No. 61-2-11-3-C Date 9-21-67 Page 1 Cancels Page 1 Dated 8-23-67

This Bulletin expires 3-1-68.

C Dallas and Gypsum Plants to manufacture and ship a non-casein type All Purpose Joint Compound, AP-275-B, per the following specifications:

Packaging - Bags per 7-16-11-3

5 lb. - Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie.) per PMS 8-10-10 in master carton per PMS 8-10-23.

60 Ft. System with Knives - Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie.) per PMS 8-13-2 in master carton per PMS 8-10-28.

60 Ft. System Without Knives - Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie.) per PMS 8-13-1, in master carton per PMS 8-10-28.

250' System - Bag per Bulletin 7-16-36.

Shipment

On orders calling for non casein or H formula All Purpose Compound.

A All shipments from the Gypsum plant must be authorized by Dept. #971-E. Gypsum to place the letter H after the code for identification.

Note: Color to be unpigmented natural white unless pigmented (Manila) color is specified on the order.

D006 2145

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG JOINT COMPOUND ALL PURPOSE (AP-275-B)	No. 61-2-11-3-C Date 9-21-67 Page 3 Cancels Page 3 Dated 4-11-67

FORMULA	AP-275-B
CEA 216	1.5%
B329	4.0
Gum Arabic (powd.)	.5
Tylose UM 4000 P	.6
Advacide TJP	.1
Dicyandiamide	.7
Mica JC	Per formula V
7RF02 Asbestos	As req'd for consistency control - 2.5% in lab batches
7RF9 "	3.0
Flo Float JF	To make 100%

RAW MATERIALS

Cea 216 - A special starch binder from Hercules Inc.
B 329* - A special starch binder from A. E. Staley Co.
Gum Arabic - #2 sorts ground to pass 60 mesh practially 100%.
Dicyandiamide - Per Bulletin 6-44-1
Tylose UM 4000 P - Per Bulletin 6-25-5
Advacide TJP - A 5% dispersion of tributyl tin oxide on $CaCO_3$ from Carlisle Chemical Works.
Mica JC - Per Bulletin 6-143-1
Asbestos 7RF02 and 7RF9 - Per Bulletin 6-14-5
Flo Float JF - Per Bulletin 6-24-9
* Raw Material Testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

This compound is borate sensitive, hence should be run after AP-100 or other non-borate containing compounds, and then with the equipment well brushed down. Weighing, mixing and Mikropulverizing are the same as for other joint compounds.

QUALITY CONTROL

Per 61-2-26 and 61-2-22.

End

UP006 2147

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY ALL PURPOSE JOINT COMPOUND	No. 61-2-26 Date 10-31-67 Page 3 Cancels Page 3 Dated 7-15-66

FORMULA AP 90 B

Casein (See note 1.)		6.0%
SG - 61		0.3
Ammonium pentaborate		1.2
Amonium oxalate		0.9
Dicyandiamide		0.7
Tetra sodium pyrophosphate		0.15
Hydrated lime		as required for proper pH-approx. .15 to .25%
Zinc oxide		0.2
Mica J.C.		Per formula V
JM 7RF02 Asbestos		as req'd for proper consistency (4.2% in lab batches)
Liquid Mix		0.152
Polyglycol P1200	0.075	
Tributyl Phosphate	0.075	
Neutralizer 5050	0.002	
Micro Fill #2		To make 100%

RAW MATERIALS

Casein	Per Bull. 6-26-4
Ammonium pentaborate	Per Bull. 6-74-2
Ammonium oxalate	Per Bull. 6-11-5
SG-61	
Dicyandiamide	Per Bull. 6-44-1
Tetra sodium pyrophosphate	Per Bull. 6-129-1
Hydrated Lime	Per Bull. 59-3-4
Zinc oxide	Per Bull. 6-94-91
Mica J.C.	Per Bull. 6-143-1
Asbestos	Per Bull. 6-14-5
Micro Fill #2	Per Bull 6-24-10
A Polyglycol P-1200	Per Bull. 6-40-16

MANUFACTURING PROCEDURE

Processing

Same as in Bulletin 61-2-22.

End

JP009 0022

A Indicates Addition

Operating Division PRODUCT PROCEDURE Approved: JB	CONFIDENTIAL DO NOT REPRODUCE OR COPY ALL PURPOSE JOINT COMPOUND AP-100 DALLAS	No. 61-2-26-5 Date 10-31-67 Page 3 Cancels Page 3 Dated 7-15-66

FORMULA

Casein		5.5
Sodium alginate		0.3
Sodium pentachlorphenate		0.25
Ammonium oxalate		1.1
Dicyandiamide		0.5
Hydrated Lime	Approx.	0.1
Asbestos, JM 7RF02		As req'd. for proper consistency.
Mica JC		Form V
Sericite Mica		10.0
Micro Fill #2 Carbonate Filler		To make 100%
Liquid Mix: Polyglycol P-1200		0.15
Neutralizer 5050		0.003

RAW MATERIALS

Asbestos, JM 7RF02	per	bulletin	6-14-5
Micro Fill #2 Carbonate Filler	"	"	6-24-10
Sodium alginate	"	"	6-8-4
Sodium pentachlorphenate	"	"	6-33-4
Ammonium oxalate	"	"	6-11-5
Dicyandiamide	"	"	6-44-1
Hydrated Lime	"	"	59-8-7
Mica JC	"	"	6-143-1
Sericite Mica	"	"	6-146-2
Casein	"	"	6-26-4
C Polyglycol P-1200	"	"	6-40-16

Neutralizer 5050 from Magnus, Mabee and Reynard, Inc.

MANUFACTURING PROCEDURE

Same as for Joint Compounds, Bulletin 61-2-22.

End

TP009 0355

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURES Approved:	**CONFIDENTIAL** **DO NOT REPRODUCE OR COPY** USG JOINT COMPOUND-ALL PURPOSE (A-335L) CHAMBLEE	No. 61-2-11-3-P Date 1-30-68 Page 3 Cancels Dated NEW

Formula	AP-335L
B-329	4.0%
CRA 216	1.5
GM-65	0.6
Advacide TJP	0.1
Dicyandiamide	1.0
Mica P-80F	Per Formula V
JM 7RF02 Asbestos	As required for consistency control, about 2.5%
PC 7RF9 Asbestos	3.0
Nopco PD-1	0.4
No. 9 NCS	To make 100%

Raw Materials	
B-329	A. E. Staley Mfg. Company
CRA 216	Hercules, Inc.
GM-65	Dow Chemical Co.
Adavacide TJP	Carlisle Chemical Works
Dicyandiamide	6-44-1
P-80F Mica (Per Formula V)	6-143-1
JM 7RF02 Asbestos	6-14-5
PC 7RF9 Asbestos	6-14-5
Nopco PD-1	Nopco Chemical Co.
No. 9 NCS	6-24-9

USP006 2185

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG READY MIXED JOINT COMPOUND - ALL PURPOSE - SOUTH GATE	No. 61-2-24-4 Date 1-30-68 Page 3 Cancels Page 3 Dated 9-29-67

FORMULAS

A. Formula JE-304C - Special White and Regular (Tinted)

Fillers	% Non-Volatile	(for 250 gal.) Lbs. (batch approx.)
Mica JC	Formula V	275 (Approx.)
C Astracal M Sericite	10.0	200
Asbestos PC7EF9	3.5	70
#400 Whiting or Marble White 325	To make 94%	To make 1880 lbs.
Methocel 65HG	0.8	16

Paste Mix	% Non-Volatile	Lbs. (for 250 gal batch appr)
Fillers	94.0	1880
VA-301P	6.0	218
PMA-30	-	1
Water	-	140 gallons (approx.)

B. Formula JE-201

Filler Mix	% Non-Volatile	Lbs. (for 945# Filler Charge)
Mica JC	Formula V	150 approx
MTC-50	30.0	300
Asbestos Floats	As req'd	35 approx
Huber Clay	10.0	100
Methocel HG	0.8	8
Ferrite Yellow*	To match manila color of Sheetrock Face Paper	
400 Whiting or Marble White 325	To make 94.5%	To make up 945 lbs.

*Plant to manufacture unpigmented form when requested by Sales Dept.

Paste Mix	% Non-Volatile	Lbs. (for approx. 130 gal.)
Fillers	94.5	945
VA-301P	5.5	96
PMA Preservative	-	4 oz.
Water	-	71 gal. approx.

DP009 1736

No. 61-2-24-4 Date 1-30-68 Page 4 Cancels Page 4 Dated 9-29-67	**CONFIDENTIAL** **DO NOT REPRODUCE OR COPY** USG READY-MIXED JOINT COMPOUND ALL PURPOSE SOUTH GATE

RAW MATERIALS

VA-301P	Per PMS Bulletin	6-104-55
Methocel HG		6-25-6
P&QF Mica		6-143-1
D		
Ser-X		6-146-2
Asbestos		6-14-5
#400 Whiting or Marble White 325		6-24-1
Stonelite		6-24-2
Nuodex PMA-18		6-100-2
Huber CWF Clay		6-36-5
Troysan PMA-30		6-100-3
M350 and MTO-50 Sericite		6-146-2
A Dolomite	Per Bulletin	58-2-2
C Astracal M Sericite	Per PMS Bulletin	6-146-2

C Indicates Change
D Indicates Deletion

TP009 1735

No. 61-2-11-3 Date 2-22-68 Page 2	USG JOINT COMPOUND
Cancels NEW Dated	ALL PURPOSE (AP-259-A)

FINISHED PRODUCT SPECIFICATIONS

A. Consistency - 63 cc to 67 cc (65 normal) for 530 ± 30 VC-3 Brabender.

B. pH - 8.0 to 8.4 (8.2 normal) 15 mins. after mixing.

C. Bond - 4 minimum - must be dried 24 hours at 75°F, 50% R.H. Do not dry in hot room or oven.

D. Color - Natural or pigmented to match SHEETROCK.

- 0 -

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG JOINT COMPOUND ALL PURPOSE AP-259A	No. 61-2-11-3 Date 2-22-68 Page 3 Cancels NEW Dated

FORMULA (AP-259-A)

EN-13	- 2.0%
B-329	- 3.0
GP-702	- 1.0
Gum Aravic No. 2 Tech. Grade	- 0.2
Santicizer #9	- 0.1
GM-65	- 0.4
Zinc Oxide	- 0.1
Vancide 51-Z	- 0.15
JM7FR02 Asbestos	- 4.5 (As Required)
Serecite Filler (1)	- 15.0
Mica P-85	- (Per Formula V)
Carbonate Filler (2)	- (To Make 100%)
Ferrite Yellow	- (Approx. 0.1 as Required)

(1) New Brighton to use CEF-1, Gypsum to use SER-X.

(2) New Brighton to use A Dolomite, Gypsum to use Stonelite.

RAW MATERIALS

A. EN-13*	- National Starch and Chemical Corp.
B. B-329*	- A.E. Staley Manufacturing Co.
C. GP-702	- Monsanto
D. Gum Arabic	- #2 Tech. Grade.
E. Santicizer #9	- Monsanto
F. GM-65*	- Dow Chemical Co.

* Raw Material Testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

Per Bulletin 61-2-26 except a thorough brushing down, followed by a cleanout charge of carbonate filler must be run before this product is made. (No cleanout is necessary afterwards as this product will not contaminate regular casein compounds.)

New Brighton Only

Also as a wet Ready Mixed Paste following procedure Part B. of Bulletin 61-2-24, Page 5 with suitable variation as determined by plant to produce a smooth homogeneous paste with properties equal to or superior to job mixed AP-259-A Dry Powder. Plant to determine best order of addition and mixing of ingredients. Finished viscosity to be 375 ± 20 tested as per Bulletin 61-2-24, Page 5, and plant to request revision in 60 days to incorporate manufacturing and quality control information into Bulletin 61-2-11-3-A.

End

NPAA 2079

No. 61-2-11-3 Date 2-22-68 Page 2	USG JOINT COMPOUND
Cancels NEW Dated	ALL PURPOSE (AP-259-A)

FINISHED PRODUCT SPECIFICATIONS

A. Consistency - 63 cc to 67 cc (65 normal) for 530 ± 30 VC-3 Brabender.

B. pH - 8.0 to 8.4 (8.2 normal) 15 mins. after mixing.

C. Bond - 4 minimum - must be dried 24 hours at 75°F, 50% R.H. Do not dry in hot room or oven.

D. Color - Natural or pigmented to match SHEETROCK.

- 0 -

OP006 2078

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE Approved:	**CONFIDENTIAL** **DO NOT REPRODUCE OR COPY** USG JOINT COMPOUND - TOPPING NEW BRIGHTON FE-132	No. 61-2-11-2-C Date 2-28-68 Page 2 Cancels Dated NEW

FORMULA	FE-132
BN-13	1.3%
B-329	2.0
GP-702	0.7
Gum Arabic No. 2 Tech. Grade	0.13
Santicizer #9	0.07
GM-65	0.4
Zinc Oxide	0.1
Vancide 51-Z	0.15
JM7FR02 Asbestos	4.5 (as required)
Serecite Filler (1)	15.0
Mica P-85	- (per formula V)
Carbonate Filler (2)	- (to make 100%)
Ferrite Yellow	- (approx. 0.1 as required)

(1) New Brighton to use CEF-1, Gypsum to use SER-X.
(2) New Brighton to use A Dolomite, Gypsum to use Stonelite.

RAW MATERIALS

A. BN-13*	National Starch and Chemical Corp.
B. B-329*	A. E. Staley Manufacturing Co.
C. GP-702	Monsanto
D. Gum Arabic	#2 Tech. Grade.
E. Santicizer #9	Monsanto
F. GM-65*	Dow Chemical Co.

* Raw Material Testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

Per Bulletin 61-2-26 except a thorough brushing down, followed by a clean-out charge of carbonate filler must be run before this product is made. (No clean-out is necessary afterwards as this product will not contaminate regular casein compounds.)

End

NA004 1782

Cancels Special Bulletin 61-2-11-3-C Pages 1 through 3

Operating Division PRODUCT PROCEDURE Approved:	USG JOINT COMPOUND ALL PURPOSE (AP-275-B)	No. 61-2-11-3-1 Date 2-22-68 Page 1 Cancels NEW Dated

Dallas and Gypsum Plants to manufacture and ship a non-casein type All Purpose Joint Compound, AP-275-B, per the following specifications.

Packaging - Bags per 7-16-11-3.

5 lb.	-	Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie.) per PMS 8-10-10 in master carton per PMS 8-10-23.
60 Ft. System With Knives	-	Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie.) per PMS 8-13-2 in master carton per PMS 8-10-28.
60 Ft. System Without Knives	-	Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie.) per PMS 8-13-1, in master carton per PMS 8-10-28.
250' System	-	Bag per Bulletin 7-16-36.

Shipment

USG Joint Compound - All Purpose or on orders calling for non casein or H formula All Purpose Compound.

Gypsum to place the letter H after the code for identification.

Note: Color to be unpigmented natural white unless pigmented (Manila) color is specified on the order, on shipments from Dallas.

Color to be pigmented (Manila) color unless unpigmented or white is specified on the order, on shipments from Gypsum.

DP007 0117

No. 61-2-11-3-1 Date 2-22-68 Page 2	USG JOINT COMPOUND
Cancels NEW Dated	ALL PURPOSE (AP-275-B)

FINISHED PRODUCT SPECIFICATIONS

Color	- Unpigmented unless pigmented (Manila or Yellow) is specified on the order.
Consistency	- 64 to 67 cc at 525 RB, 75°F, 15 min. after mixing, 75 RPM with pin paddle and 250 cm. gm. torque head in Brabender Viscometer.
pH	- 8.6 to 8.9
Bond	- 5 minimum when dried at less than 60% R.H.
Mixing and Application	- To match standard sample from Research.
Lumps or Grit	- None permitted.

- 0 -

M-5791 (Back)

D0007 0179

Operating Division PRODUCT PROCEDURE Approved:	**CONFIDENTIAL** DO NOT REPRODUCE OR COPY USG JOINT COMPOUND ALL PURPOSE AP-275B	No. 61-2-11-3-1 Date 2-22-68 Page 1 Cancels NEW Dated

FORMULA (AP-275-B)

CEA 216	AP-275-B
CEA 216	1.5%
B 329	4.0
Gum Arabic (powd.)	.5
Tylose UM 4000 P	.6
Advacide TJP	.1
Dicyandiamide	.7
Mica JC	Per Formula V
TRF02 Asbestos	As Req'd for consistency control - 2.5% in lab batches.
TRF9 Asbestos	3.0
Flo Float JF	To make 100%
Nopco PD-1	0.3%

RAW MATERIALS

Nopco PD-1	- A dry powder defoamer from Nopco Chemical Co., Chicago, Ill.
CEA 216	- A special starch binder from Hercules Inc.
B 329*	- A special starch binder from A.E. Staley Company.
Gum Arabic	- #2 sorts ground to pass 60 mesh practically 100%.
Dicyandiamide	- Per Bulletin 6-44-1.
Tylose UM 4000 P	- Per Bulletin 6-25-5.
Advacide TJP	- A 5% dispersion of tributyl tin oxide on $CaCO_3$ from Carlisle Chemical Works.
Mica JC	- Per Bulletin 6-143-1.
Asbestos TRF02 and TRF9	- Per Bulletin 6-14-5.
Flo Float JF	- Per Bulletin 6-24-9.

* Raw material testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

This compound is borate sensitive, hence should be run after AP-100 or other non-borate containing compounds, and then with the equipment well brushed down. Weighing, mixing, and Mikropulverizing are the same as for other joint compounds.

QUALITY CONTROL

Per 61-2-26 and 61-2-22.

End

DP001 0179

Originally Issued 2-23-67 SPECIAL BULLETIN 1st Extension

Operating Division PRODUCT PROCEDURE C Approved:	SHEETROCK JOINT COMPOUND - TOPPING (FE-121B)	No. 61-2-11-2-D Date 3-5-68 Page 1 Cancels Page 1 Dated 2-23-67

C This Bulletin expires 3-1-69.

DESCRIPTION

A non-casein topping compound designed for use over CGC non-casein all purpose compound. Plants to manufacture for field trials and initial shipments per direction of Department #247.

MANUFACTURING PLANTS

Hagersville and Montreal

PRODUCT LINE

Joint Compound

IDENTIFICATION AND PACKAGING

Bags per Department #247. This product must be packaged in polyethylene lined bags.

FINISHED PRODUCT SPECIFICATIONS

Consistency	-	56 cc.
Brabender	-	400 to 600 units on VC-3 machine at 77°F
pH	-	9.3 to 9.7 (9.5 normal)
Bond	-	2 minimum
Color	-	Pigmented to match SHEETROCK face paper.

- 0 -

OP006 1729

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY SHEETROCK JOINT COMPOUND - TOPPING (FE-121B)	No. 61-2-11-2-D Date 3-5-68 Page 2 Cancels Page 2 Dated 2-23-67

C

C FORMULA

	FE-121B
C Gelva Powder GP-702	2.0%
C Santicizer #9 (60- mesh)	0.2
C B-329 (-40 mesh)	2.0
Vancide 51-Z	0.15
JM7RF02	about 4.5%
GM-65	0.7
Zinc Oxide	0.1
Tetra sodium pyrophosphate	0.1
A-Dolomite	to make 100%
AMC Mica JC	0.7 Formula V
Ferrite Yellow	about 0.1

RAW MATERIALS

Gelva Powder GP-702	PMS 6-104-18-1
Santicizer #9 (-60 mesh)	PMS 6-98-2
B-329 (-40 mesh)	A.E. Staley & Co.
Vancide 51-Z	PMS 6-100-1
GM-65 (-40 mesh)	Dow Chemical Co.
Zinc Oxide	PMS 6-94-91
Tetra sodium pyrophosphate	PMS 6-129-1

MANUFACTURING PROCEDURE

Per Bulletin 61-2-23 except a thorough brushing down, followed by a clean-out charge of carbonate filler must be done before and after this product is manufactured.

End

OP006 1730

C Indicates Change

No. 81-2-24-4 Date 3-3-68 Page 2	[illegible] READY-MIXED JOINT COMPOUND ALL PURPOSE
Cancels Page 2 Dated 5-1-67	SOUTH GATE

FINISHED PRODUCT SPECIFICATIONS

Viscosity - Formula JE-304C

1. Thin Consistency (TC) Brabender of 540-620.
2. Regular Consistency Brabender of 620-700.
3. Heavy Consistency (HC) Brabender of 700-780.

- 0 -

7P009 1120

Originally issued 10-10-66 SPECIAL BULLETIN 2nd Extension

Operating Division		No. 61-2-11-3-A
PRODUCT PROCEDURE	USG JOINT COMPOUND	Date 4-5-68
		Page 1
Approved:	ALL PURPOSE (AP-259A)	Cancels Page 1
		Dated 8-23-67

C This Bulletin expires 3-1-69.

DESCRIPTION

Non Casein All-Purpose Joint Compound (AP-259A). Shipment
C as directed by Department 991.

MANUFACTURING PLANTS

C New Brighton

PRODUCT LINE

Joint Compound

IDENTIFICATION AND PACKAGING

Per Bulletin 7-16-11-3.

5 lb. - Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie.) per PMS 8-10-10 in master carton per PMS 8-10-23.

60 Ft. System with knives - Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie.) per PMS 8-13-2 in master carton per PMS 8-10-28.

60 Ft. System without Knives - Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie.) per PMS 8-13-1, in master carton per PMS 8-10-28.

250' System-Bag per Bulletin 7-16-36.

New Brighton only - Premixed paste to be packaged in unlithographed 5 gallon cans per PMS 8-29-3 and labelled with a gummed sticker of design and type to be approved by Chicago Corporate Marketing.

Manufacturing code to be applied in normal manner.

Plant to ship ATM (Ames Tool Mix) Ready Mixed material only to accounts approved by Product Manager, Eastern Construction Products Division.

UP006 2104

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG JOINT COMPOUND ALL PURPOSE (AP-259A)	No. 61-2-11-3-A Date 4-5-68 Page 3 Cancels Page 3 Dated 6-27-67

FORMULA (AP-259A)

BN-13	2.0%
B-329	3.0
GP-702	1.0
Gum Arabic No. 2 Tech. Grade	0.2
Santicizer #9	0.1
GM-65	0.4
Zinc Oxide	0.1
Vancide 51-Z	0.15
JM7FR02 Asbestos	4.5 (as required)
Serecite Filler (1)	15.0
Mica P-85	- (Per Formula V)
Carbonate Filler (2)	- (to make 100%)
Ferrite Yellow	- (approx. 0.1 as required)

C (1) New Brighton to use CEF-1.
C (2) New Brighton to use A Dolomite.

RAW MATERIALS

A. BN-13*	National Starch and Chemical Corp.
B. B-329*	A. E. Staley Manufacturing Co.
C. GP-702	Monsanto
D. Gum Arabic	#2 Tech. Grade.
E. Santicizer #9	Monsanto
F. GM-65*	Dow Chemical Co.

*Raw Material Testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

Per Bulletin 61-2-26 except a thorough brushing down, followed by a clean-out charge of carbonate filler must be run before this product is made. (No clean-out is necessary afterwards as this product will not contaminate regular casein compounds.)

New Brighton Only

Also as a wet Ready Mixed Paste following procedure Part B. of Bulletin 61-2-24, Page 5 with suitable variation as determined by plant to produce a smooth homogeneous paste with properties equal to or superior to job mixed AP 259A Dry Powder. Plant to determine best order of addition and mixing of ingredients. Finished viscosity to be 375±20 tested as per Bulletin 61-2-24 P5, and plant to request revision in 60 days to incorporate manufacturing and quality control information into Bulletin 61-2-11-3-A.

End.

M-8971-C Rev. 9/65 (Printed in U.S.A.)

C Indicates Cha

OP006 2106

Operating Division	CONFIDENTIAL	No. 61-2-21-
PRODUCT PROCEDURE	DO NOT REPRODUCE OR COPY	Date 4-11-68
Approved:	USG READY MIXED JOINT COMPOUND - ALL PURPOSE - CHLORIDE	Page -
		Cancels Page 3
		Dated 6-20-67

FORMULA: Je-217

	% Non-Volatile	Lbs. (for 100 gal. batch approx.)
Mica JC	(2/3 Formula V)	80 approx.
DXW Mineralite (Note 1)	30.0	240
Asbestos Floats	(as required)	24 approx.
Huber CWF Clay	10.0	80
Methyl Cellulose	0.8	6 - 6 oz.
Ferrite Yellow	(to match manila color of Sheetrock face paper)	
#9 Marble	(to make 100%)	(to make 800 lbs. total non-volatile)
PM-4386	5.5	73
C Carbitol (Note 2)	-	7
PMA Preservative	-	8 oz.
Water	-	53 gals. approx.

Notes: (1) DXW Mineralite, Ser-X, or CE-F-1 Sericite may be used in pigmented Ready Mix.

A (2) Omit Carbitol when formulating for packaging in 5 gal. containers.

RAW MATERIALS

PM-4386	Per	Bulletin	6-104-55
Methyl Cellulose	"	"	6-25-5, 6-25-6
Solvent	"	"	6-149-3
Mica	"	"	6-143-1
DXW Mineralite	"	"	6-146-2
Asbestos 7R79	"	"	6-7-1
Nuodex PMA-18	"	"	6-100-2
Troysan PMA-30	"	"	6-100-3
Huber CWF Clay	"	"	6-36-5
#9 Georgia Marble	"	"	6-24-9
Ferrite Yellow	"	"	

TP009 1997

C Indicates Change
A Indicates Addition

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG JOINT COMPOUND ALL PURPOSE AP-259A	No. 61-2-11-3 Date 5-22-68 Page 3 Cancels Page 3 Dated 2-22-68

FORMULA (AP-259-A)

BN-13	- 2.0%
B-329	- 3.0
GP-702	- 1.0
Gum Aravic No. 2 Tech. Grade	- 0.2
Santicizer #9	- 0.1
GM-65	- 0.4
Zinc Oxide	- 0.1
Vancide 51-Z	- 0.15
JM7FR02 Asbestos	- 4.5 (As Required)
Serecite Filler (1)	- 15.0
Mica P-85	- (Per Formula V)
Carbonate Filler (2)	- (To Make 100%)
Ferrite Yellow	- (Approx. 0.1 as Required)

(1) New Brighton to use CEF-1, Gypsum to use SER-X.

C (2) New Brighton to use A Dolomite or #325 Mineral Filler, Gypsum to use Stonelite.

RAW MATERIALS

A.	BN-13*	- National Starch and Chemical Corp.
B.	B-329*	- A.E. Staley Manufacturing Co.
C.	GP-702	- Monsanto
D.	Gum Arabic	- #2 Tech. Grade.
E.	Santicizer #9	- Monsanto
F.	GM-65*	- Dow Chemical Co.
A G.	Carbonate Filler (Gypsum Only)	- PMS 6-24-2.
A H.	Carbonate Filler (New Brighton Only)	- Per Bulletin 58-2-2 and PMS 6-24-17.

* Raw Material Testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

Per Bulletin 61-2-26 except a thorough brushing down, followed by a cleanout charge of carbonate filler must be run before this product is made. (No cleanout is necessary afterwards as this product will not contaminate regular casein compounds.)

New Brighton Only

Also as a wet Ready Mixed Paste following procedure Part B. of Bulletin 61-2-24, Page 5 with suitable variation as determined by plant to produce a smooth homogeneous paste with properties equal to or superior to job mixed AP-259-A Dry Powder. Plant to determine best order of addition and mixing of ingredients. Finished viscosity to be 375 ± 20 tested as per Bulletin 61-2-24, Page 5, and plant to request revision in 60 days to incorporate manufacturing and quality control information into Bulletin 61-2-11-3-A.

End

C Indicates Change
A Indicates Addition

TP0006 270

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG JOINT COMPOUND ALL PURPOSE AP-259A	No. 61-2-11-3 Date 6-14-68 Page 3 Cancels Page 3 Dated 5-22-68

FORMULA (AP-259-A)

BN-13	- 2.0%
B-329	- 3.0
GP-702	- 1.0
Gum Aravic No. 2 Tech. Grade	- 0.2
Santicizer #9	- 0.1
GM-65	- 0.4
Zinc Oxide	- 0.1
Vancide 51-Z	- 0.15
JM7FR02 Asbestos	- 4.5 (As Required)
Serecite Filler (1)	- 15.0
Mica P-85	- (Per Formula V)
Carbonate Filler (2)	- (To Make 100%)
Ferrite Yellow	- (Approx. 0.1 as Required)

(1) New Brighton to use CEF-1, Gypsum to use SER-X.

(2) New Brighton to use A Dolomite or #325 Mineral Filler, Gypsum to use Stonelite.

RAW MATERIALS

C	A. BN-13*	- PMS 6-124-9
C	B. B-329*	- PMS 6-124-10
	C. GP-702	- Monsanto
	D. Gum Arabic	- #2 Tech. Grade.
	E. Santicizer #9	- Monsanto
	F. GM-65*	- Dow Chemical Co.
	G. Carbonate Filler (Gypsum Only)	- PMS 6-24-2.
	H. Carbonate Filler (New Brighton Only)	- Per Bulletin 58-2-2 and PMS 6-24-17.

* Raw Material Testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

Per Bulletin 61-2-26 except a thorough brushing down, followed by a cleanout charge of carbonate filler must be run before this product is made. (No cleanout is necessary afterwards as this product will not contaminate regular casein compounds.)

New Brighton Only

Also as a wet Ready Mixed Paste following procedure Part B. of Bulletin 61-2-24, Page 5 with suitable variation as determined by plant to produce a smooth homogeneous paste with properties equal to or superior to job mixed AP-259-A Dry Powder. Plant to determine best order of addition and mixing of ingredients. Finished viscosity to be 375 ± 20 tested as per Bulletin 61-2-24, Page 5, and plant to request revision in 60 days to incorporate manufacturing and quality control information into Bulletin 61-2-11-3-A.

End

C-5791-C 1/68 (Printed in U.S.A.)

C Indicates Change

UP006 2075

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG JOINT COMPOUND ALL PURPOSE AP-275B	No. 61-2-11-3-1 Date 6-14-68 Page 3 Cancels Page 3 Dated 2-22-68

FORMULA (AP-275-B)

	AP-275-B
CEA 216	1.5%
B 329	4.0
Gum Arabic (powd.)	.5
Tylose UM 4000 P	.6
Advacide TJP	.1
Dicyandiamide	.7
Mica JC	Per Formula V
7RF02 Asbestos	As Req'd for consistency control - 2.5% in lab batches.
7RF9 Asbestos	3.0
Flo Float JF	To make 100%
Nopco PD-1	0.3%

RAW MATERIALS

Nopco PD-1	- A dry powder defoamer from Nopco Chemical Co., Chicago, Ill.
CEA 216	- A special starch binder from Hercules Inc.
C B 329*	- Per Bulletin 6-124-10
Gum Arabic	- #2 sorts ground to pass 60 mesh practically 100%.
Dicyandiamide	- Per Bulletin 6-44-1.
Tylose UM 4000 P	- Per Bulletin 6-25-5.
Advacide TJP	- A 5% dispersion of tributyl tin oxide on $CaCO_3$ from Carlisle Chemical Works.
Mica JC	- Per Bulletin 6-143-1.
Asbestos 7RF02 and 7RF9	- Per Bulletin 6-14-5.
Flo Float JF	- Per Bulletin 6-24-9.

* Raw material testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

This compound is borate sensitive, hence should be run after AP-100 or other non-borate containing compounds, and then with the equipment well brushed down. Weighing, mixing, and Mikropulverizing are the same as for other joint compounds.

QUALITY CONTROL

Per 61-2-26 and 61-2-22.

End

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG READY MIXED JOINT COMPOUND	No: 61-2-24-4 Date 10-22-66 Page 3 Cancels Page 3 Dated 1-30-68

ALL PURPOSE - SOUTH GATE

FORMULAS

A. Formula JE-304C - Special White and Regular (Tinted)

Fillers	% Non-Volatile	(For 250 Gal.) Lbs. (Batch Approx.)
Mica JC	Formula V	275 (Approx.)
Astracal M Sericite	10.0	200
C Asbestos UC210	2.5 (approx.)	50
#400 Whiting or Marble White 325	To Make 94%	To Make 1880 Lbs.
Methocel 65HG	0.8	16

Paste Mix	% Non-Volatile	Lbs. (for 250 gal. batch appr.)
Fillers	94.0	1880
VA-301P	6.0	218
PMA-30	-	1
Water	-	140 gallons (approx.)

B. Formula JE-201

Filler Mix	% Non-Volatile	Lbs. (For 945# Filler Charge)
Mica JC	Formula V	150 approx.
MTO-50	30.0	300
Asbestos Floats	As Req'd.	35 approx.
Huber Clay	10.0	100
Methocel HG	0.8	8
Ferrite Yellow*	To match manila color of SHEETROCK Face Paper.	
400 Whiting or Marble White 325	To make 94.5%	To make up 945 lbs.

* Plant to manufacture unpigmented form when requested by Sales Dept.

Paste Mix	% Non-Volatile	Lbs. (for approx. 130 gal.)
Fillers	94.5	945
VA-301P	5.5	96
PMA Preservative	-	4 oz.
Water	-	71 gal. approx.

DP009 1724

C Indicates Change

No. 61-2-11-3-G Date 12-19-68 Page 2 Cancels Dated NEW	USG JOINT COMPOUND - ALL PURPOSE (AP-356) CHAMELEE

IDENTIFICATION AND PACKAGING

To be packaged in 25 lb. USG Joint Compound - All Purpose bags. The plant to choose an identifying letter which will be shown after the code.

FINISHED PRODUCT SPECIFICATIONS

Consistency:	63-65 cc per 100 g of compound
Viscosity:	525-25 Brabender units 15 minutes after mixing. To be tested at 75F, using a pin paddle and a viscometer having a 250 cm gm torsion head and operating at 75 rpm.
pH:	8.8 - 9.2
Bond:	5 minimum when dried at 75F-50% RH. Do not dry in oven.
Color:	Natural or pigmented.

- 0 -

(Back)

No. 61-2-11-3-H Date 12-19-68 Page 2 Cancels NEW Dated	USG JOINT COMPOUND - ALL PURPOSE (AP-356) DALLAS

FINISHED PRODUCT SPECIFICATIONS

Color	- Pigmented or white. To match plant standards.
Consistency	- 63-65 cc/100 gms.
Viscosity	- 525 ± 25 BB, pin paddle, 75°F, 15 min. after mixing: 75 RPM w/250 cm gm torque head.
pH	- 8.8 - 9.2
Bond	- 5 minimum. Dried at 75°F/50% RH

- 0 -

NP006 2197

M-8971 (Back)

SPECIAL BULLETIN

Operating Division	CONFIDENTIAL	No. 61-2-11-3-G
PRODUCT PROCEDURE	DO NOT REPRODUCE OR COPY	Date 12-19-68
Approved:	USG JOINT COMPOUND - ALL PURPOSE (AP-356) CHAMBLEE	Page 3
		Cancels Dated NEW

FORMULA

	AP-356
B-329	3.5%
CEA-216	1.5
GP-702	1.0
Santicizer No. 9	0.1
GM-65	0.6
Zinc Oxide	0.1
Dicyandiamide	1.0
Advacide TJP	0.1
Tetrasodium Pyrophosphate	0.1
JM7RF02 Asbestos	As req'd (About 5% in lab.)
325 Mesh WMC Mica	7.0
Pyrax A	15.0
Nopco PD-1	0.3
No. 9 HCS	To make 100%
Ferrite Yellow	As req'd (approx 0.1%)

RAW MATERIALS

CEA-216	Hercules, Inc
TSPP	6-177-4
325 Mesh WMC Mica	Western Mica Div., U.S.G.
Pyrax A	6-103-1
Nopco PD-1	Nopco Chemical Co.

Other materials per Bulletin 61-2-11-3-D

MANUFACTURING PROCEDURE

Per Bulletin 61-2-11-3-D

End

UP006 2192

Operating Division		No.	[illegible]
PRODUCT PROCEDURE	[illegible]	Date	2-22-69
	ALL PURPOSE (AP-259A)	Page	1
Approved:		Cancels	Page 1
		Dated	2-22-68

DESCRIPTION

Non Casein All-Purpose Joint Compound (AP-259A).

MANUFACTURING PLANT

New Brighton

PRODUCT LINE

Joint Compound

IDENTIFICATION AND PACKAGING

Per Bulletin 7-16-11-3.

M006 207

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG JOINT COMPOUND ALL PURPOSE AP-259A	No. [illegible] Date 2-[illegible]-69 Page [illegible] Cancels Page [illegible] Dated 6-1[illegible]-68

FORMULA (AP-259-A)

BN-13	- 2.0%
B-329	- 3.0
GP-702	- 1.0
Gum Aravic No. 2 Tech. Grade	- 0.2
Santicizer #9	- 0.1
GM-65	- 0.4
Zinc Oxide	- 0.1
Vancide 51-Z	- 0.15
JM7FR02 Asbestos	- 4.5 (As Required)
Narvon CE-F-1	- 15.0
Mica P-85	- (Per Formula V)
Carbonate Filler (1)	- (To Make 100%)
Ferrite Yellow	- (Approx. 0.1 as Required)

(1) A Dolomite or #325 Mineral Filler.

RAW MATERIALS

A. BN-13*	- PMS 6-124-9
B. B-329*	- PMS 6-124-10
C. GP-702	- Monsanto
D. Gum Arabic	- #2 Tech. Grade.
E. Santicizer #9	- 6-98-2
F. GM-65*	- Dow Chemical Co.
G. Carbonate Filler	- PMS 6-24-17.

* Raw Material Testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

Per Bulletin 61-2-26 except a thorough brushing down, followed by a cleanout charge of carbonate filler must be run before this product is made. (No clean-out is necessary afterwards as this product will not contaminate regular casein compounds.)

End

AP006 2074

Operating Division PRODUCT PROCEDURE Approved:	**CONFIDENTIAL** **DO NOT REPRODUCE OR COPY** USG JOINT COMPOUND ALL PURPOSE (AP-361A) - NEW BRIGHTON	No. 61-2-11-3-K Date 3-5-09 Page 3 Cancels NEW Dated

FORMULA	AP-361A
EN-13	1.3%
B-329	2.0
GP-702	0.7
Gum Arabic No. 2 Tech. Grade	0.13
Santicizer #9	0.07
GM-65	0.4
Zinc Oxide	0.1
Vancide 51-Z	0.15
JM7FB02 Asbestos	4.5 (as required)
Mica P-85	-- (per formula V)
Carbonate Filler (1)	-- (to make 100%)
Ferrite Yellow	-- (approx. 0.1 as required)

(1) New Brighton to use A Dolomite or #325 Mineral Filler.

RAW MATERIALS

A. EN-13*	Per PMS 6-124-9
B. B-329*	Per PMS 6-124-10
C. GP-702	Per PMS 6-104-18-1
D. Gum Arabic #2 Tech.	PMS 6-62-2
E. Santicizer #9	Monsanto
G. GM-65*	Dow Chemical Co.
G. Carbonate Filler	Per PMS 6-24-17

*Raw Material Testing Procedure per PMS 12-45.

MANUFACTURING PROCEDURE

Per Bulletin 61-2-26 except a thorough brushing down followed by a clean-out charge of carbonate filler must be run before this product is made. (No clean-out is necessary afterwards as this product will not contaminate regular casein compounds.)

End

NPAN6 2216

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE Approved:	**CONFIDENTIAL** **DO NOT REPRODUCE OR COPY** USG JOINT COMPOUND - ALL PURPOSE (AP-358) CHAMBLEE	No. 61-2-11-3-J Date 4-2-69 Page 2 Cancels NEW Dated

FORMULA

	AP-358
B-329	3.5%
GF-702	2.5
Santicizer No. 9	.25
GM-65	0.6
Zinc Oxide	0.1
Vancide 51-Z	0.15
Tetrasodium Pyrophosphate	0.1
JM7RF02	As Req'd (Approx 4-4.5%)
'MC Mica P80F	15
Nopco PD-1	0.3
No. 9 NCS	To Make 100%

RAW MATERIALS

TSPP	6-177-4
Mica P-80F	58-61-1
Nopco PD-1	Nopco Chemical Co.
Vancide 51-Z	6-100-1

Other materials per Bulletin 61-2-11-3-D

MANUFACTURING PROCEDURE

Per Bulletin 61-2-11-3-D

END

USG 9006 2202

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG JOINT COMPOUND ALL PURPOSE (AP-361A) - NEW BRIGHTON	No. 61-2-11-3-K Date 5-7-69 Page 3 Cancels Page 3 Dated 3-5-69

FORMULA

	AP-361A
BN-13	1.3%
B-329	2.0
GP-702	0.7
Gum Arabic No. 2 Tech. Grade	0.13
Santicizer #9	0.07
GM-65	0.4
Zinc Oxide	0.1
C Ziram 95% Technical	0.15
JM7FR02 Asbestos	4.5 (as required)
Mica P-85	-- (per formula V)
Carbonate Filler (1)	-- (to make 100%)
Ferrite Yellow	-- (approx. 0.1 as required)

(1) New Brighton to use A Dolomite or #325 Mineral Filler.

RAW MATERIALS

A. BN-13*	Per PMS 6-124-9
B. B-329*	Per PMS 6-124-10
C. GP-702	Per PMS 6-104-18-1
D. Gum Arabic #2 Tech.	PMS 6-62-2
E. Santicizer #9	Monsanto
C F. GM-65*	Dow Chemical Co.
G. Carbonate Filler	Per PMS 6-24-17
A H. Ziram 95% Technical Grade	Per PMS 6-100-11

*Raw Material Testing Procedure per PMS 12-45.

MANUFACTURING PROCEDURE

Per Bulletin 61-2-26 except a thorough brushing down followed by a clean-out charge of carbonate filler must be run before this product is made. (No clean-out is necessary afterwards as this product will not contaminate regular casein compounds.)

End

UP006 2213

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG JOINT COMPOUND ALL PURPOSE AP-259A	No. 61-2-11-3 Date 5-7-69 Page 2 Cancels Page 3 Dated 2-24-69

FORMULA (AP-259-A)

BN-13	- 2.0%
B-329	- 3.0
GP-702	- 1.0
Gum Arabic No. 2 Tech. Grade	- 0.2
Santicizer #9	- 0.1
GM-65	- 0.4
Zinc Oxide	- 0.1
C Ziram 95% Technical	- 0.15
JM7FR02 Asbestos	- 4.5 (As Required)
Narvon CE-F-1	- 15.0
Mica P-85	- (Per Formula V)
Carbonate Filler (1)	- (To Make 100%)
Ferrite Yellow	- (Approx. 0.1 as Required)

(1) A Dolomite or #325 Mineral Filler.

RAW MATERIALS

A. BN-13*	- PMS 6-124-9
B. B-329*	- PMS 6-124-10
C. GP-702	- Monsanto
D. Gum Arabic	- #2 Tech. Grade.
E. Santicizer #9	- 6-98-2
F. GM-65*	- Dow Chemical Co.
G. Carbonate Filler	- PMS 6-24-17.
A H. Ziram 95% Technical Grade	- PMS 6-100-11

* Raw Material Testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

Per Bulletin 61-2-26 except a thorough brushing down, followed by a cleanout charge of carbonate filler must be run before this product is made. (No clean-out is necessary afterwards as this product will not contaminate regular casein compounds.)

END

NPONA 2071

FORMULA AP 90 B

Casein (See note 1.)		6.0%
SG - 61		0.3
Ammonium pentaborate		1.2
Amonium oxalate		0.9
Dicyandiamide		0.7
Tetra sodium pyrophosphate		0.15
Hydrated lime		as required for proper pH-approx. .15 to .25%
Zinc oxide		0.2
Mica J.C.		Per formula V
JM 7RF02 Asbestos		as req'd for proper consistency (4.2% in lab batches)
Liquid Mix		0.152
Polyglycol P1200	0.075	
Tributyl Phosphate	0.075	
Neutralizer 5050	0.002	
C Micro Fill #2 or Carthage-92		To make 100%

RAW MATERIALS

Casein	Per Bull. 6-26-4
Ammonium pentaborate	Per Bull. 6-74-2
Ammonium oxalate	Per Bull. 6-11-5
SG-61	
Dicyandiamide	Per Bull. 6-44-1
Tetra sodium pyrophosphate	Per Bull. 6-129-1
Hydrated Lime	Per Bull. 59-3-4
Zinc oxide	Per Bull. 6-94-91
Mica J.C.	Per Bull. 6-143-1
Asbestos	Per Bull. 6-14-5
Micro Fill #2	Per Bull 6-24-10
A Carthage-92	Per Bull. 6-24-20
Polyglycol P-1200 ____	Per Bull. 6-40-16

MANUFACTURING PROCEDURE

Processing

Same as in Bulletin 61-2-22.

End

GP009 0021

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG ALL PURPOSE JOINT COMPOUND (AP-366)	No. 61-2-11-3- Date 5-12-69 Page 3 Cancels NEW Dated

FORMULA	AP-366
GP-702	1.66%
Santicizer #9	0.16
Gelvatol 20-60 (-70 mesh)	0.83
Crystalline Sorbitol (Powder)	0.4
Glyoxal, 80% Crystalline (-50 mesh)	0.5
GM-65	0.5
JM7RF02 (about)	4.0
Mica JC	2/3 Formula V
Ziram	0.1
#9NCS or Flo-Floats	To make 100%

RAW MATERIALS

GP-702	PMS 6-104-18-1
Santicizer #9 (-40 mesh)	PMS 6-98-2
Gelvatol 20-60 B. P. (-70 mesh)	Monsanto Co.
Crystalline Sorbitol (powder)	Atlas Chemical, Chas. Pfizer
Glyoxal (80% crystalline, 100% minus 50 mesh)	Centerchem Inc., N.Y. N.Y.
GM-65	Dow Chemical
Ziram	PMS 6-100-11

Other raw materials per Bulletin 61-2-11-3-1

MANUFACTURING PROCEDURE

Prior to making this product, a thorough brushing down of the Broughton mixer must be made followed by a clean-out charge of carbonate filler. Contamination with PERF-A-TAPE Joint Compounds, especially those containing ammonium pentaborate is to be avoided.

END

D006 2224

Operating Division PRODUCT PROCEDURE Approved:	**CONFIDENTIAL** **DO NOT REPRODUCE OR COPY** ALL PURPOSE JOINT COMPOUND	No. 61-2-26 Date 6-19-69 Page 3 Cancels Page 3 Dated 5-8-69

FORMULA AP 90 B

Casein (See note 1.)		6.0%
SG - 61		0.3
Ammonium pentaborate		1.2
Amonium oxalate		0.9
Dicyandiamide		0.7
Tetra sodium pyrophosphate		0.15
Hydrated lime		as required for proper pH-approx. .15 to .25%
Zinc oxide		0.2
Mica J.C.		Per formula V
JM 7RF02 Asbestos		as req'd for proper consistency (4.2% in lab batches)
Liquid Mix		0.152
Polyglycol P1200	0.075	
Tributyl Phosphate	0.075	
Neutralizer 5050	0.002	
Micro Fill #2 or Carthage-92		To make 100%

RAW MATERIALS

	Casein	Per Bull. 6-26-4
	Ammonium pentaborate	Per Bull. 6-74-2
	Ammonium oxalate	Per Bull. 6-11-5
C	SG-61	Per Bull. 6-151-6
	Dicyandiamide	Per Bull. 6-44-1
	Tetra sodium pyrophosphate	Per Bull. 6-129-1
	Hydrated Lime	Per Bull. 59-3-4
	Zinc oxide	Per Bull. 6-94-91
	Mica J.C.	Per Bull. 6-143-1
	Asbestos	Per Bull. 6-14-5
	Micro Fill #2	Per Bull 6-24-10
	Carthage-92	Per Bull. 6-24-20
	Polyglycol P-1200	Per Bull. 6-40-16
A	Tributyl Phosphate	Per Bull. 6-98-4

MANUFACTURING PROCEDURE

Processing

Same as in Bulletin 61-2-22.

End

TP009 0020

SPECIAL BULLETIN

Operating Division	CONFIDENTIAL	No. 61-2-11-3-N
PRODUCT PROCEDURE	DO NOT REPRODUCE OR COPY	Date 12-30-69
Approved:	USG JOINT COMPOUND - ALL PURPOSE (AP-372) - CHAMBLEE	Page 2
		Cancels NEW Dated

FORMULA — AP-372

GP-702		1.66%
Santicizer #9		0.16
JMTRF02	about	4.5
Mica JC	per formula V	
Nopco PD-1		0.3
#9NCS	to make	100%
Gelvatol 20-60 B. P.		0.83
Sorbitol		0.5
Glyoxal (80% crystalline)		0.5
Natrosol 250KX		0.5
Ziram		0.1

RAW MATERIALS

GP-702	PMS 6-104-18-1
Santicizer #9 (-40 mesh)	PMS 6-98-2
Gelvatol 60-60 B.P. (-70 mesh)	Monsanto Co.
Crystalline Sorbitol (powder)	Atlas Chemical, Chas. Pfizer
Glyoxal (80% crystalline, 100% -50 mesh)	Centerchem, Inc., N.Y., N.Y.
Natrosol 250KX	Hercules, Inc.
Nopco PD-1	Nopo Chemical Co.

Other raw materials per Bulletin 61-2-11-3

MANUFACTURING PROCEDURE

Prior to making this product, a thorough brushing down of the Broughton mixer must be made followed by a clean-out charge of carbonate filler. Contamination with Perf-A-Tape Joint Compounds, especially those containing ammonium pentaborate is to be avoided.

EH

TP006 2251

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG READY-MIXED JOINT COMPOUND TOPPING (JE-8510)	No. 61-2-25-N Date 8-3-70 Page 2 Cancels Dated NEW

FORMULA	% Non-Volatile	Lbs/2000 Lbs. N.V.
325 mesh W. G. Mica	5.0%	100
PC 7HF9 Asbestos	2.0	40
Pyrax A or Pyrax B	15.0	300
Ammonium Pentaborate	0.7	14
GM-65	0.7	14
#9NCS	to make 96.5%	to make 1462 lbs.
PM-4386 (60% solids)	3.5	116.5
Water	—	125 gal. approx.

RAW MATERIALS

Per Bulletin 61-2-24 except:

325 W. G. Mica	PMS 6-143-4
Pyrax A	PMS 6-103-1
Pyrax B	PMS 6-103-2
Ammonium Pentaborate	PMS 6-74-2
GM-65	Dow Chemical

MANUFACTURING PROCEDURE

Per Bulletin 61-2-24.

END

SPCO 2477

Operating Division PRODUCT PROCEDURE Approval:	USG JOINT COMPOUND ALL PURPOSE (AP-361A) NEW BRIGHTON	No. 61-2-11-3-K Date 3-12-70 Page 1 Cancels Page 1 Dated 11-13-69

C This Bulletin expires 3-1-71.

DESCRIPTION

A non-casein all purpose joint compound for 5 lb. packages, 60 ft. systems and 250 ft. systems only.

This Bulletin will not be suitable for establishment on a permanent basis until the requirements on Purchase Material Specifications as listed in Section VIII, Information Bulletin 303 have been complied with.

MANUFACTURING PLANT - New Brighton

IDENTIFICATION AND PACKAGING

5 lb. - Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie), per PMS 8-10-10 in master carton per PMS 8-10-23.

60 Ft. System With Knives - Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie), per PMS 8-13-2 in master carton per PMS 8-10-23.

60 Ft. System Without Knives - Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie), per PMS 8-13-1, in master carton per PMS 8-10-23.

250' System - Bag per Bulletin 7-16-36.

UP006 2209

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE Approved:	USG READY-MIXED JOINT COMPOUND ALL PURPOSE - JE-217 & JE-774D CHAMBLEE	No. 61-2-24-1-J Date 3-2-70 Page 1 Cancels Dated NEW

This bulletin expires : 9-1-70.

Chamblee Plant to manufacture one trial batch each of formulas JE-217 and JE-774D READY-MIXED Joint Compounds containing 2-1/2 lbs. of Troysen #174 (non-mercurial fungicide) per 250 gallon batch instead of the 1 lb. of PMA-30 normally used.

Plant to submit a 5 gallon pail of each batch containing Troysen #174 and a 5 gallon pail of JE-217 and JE-774D containing PMA-30, to Research.

Remainder of trial batches to be shipped as normal production providing the appropriate FINISHED PRODUCT SPECIFICATIONS are met.

END

EXPIRED 9-1-70

TP0C9 1455

M-8971 Rev. 1/63 (Printed in U.S.A.)

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE Approved:	USG JOINT COMPOUND - ALL PURPOSE (AP-372)	No. 61-2-11-3-N Date 11-12-70 Page 1 Cancels Page 1 Dated 12-30-69

This bulletin expires 1-1-71.

DESCRIPTION

Chamblee Plant to manufacture trial batches of USG Joint Compound-All Purpose (AP-372) for field trials and subsequent shipments per direction of L. B. Boggs, Atlanta #981.

A Montreal and Hagersville Plants to manufacture trial batches of USG Joint Compound-All Purpose (AP-372) for field trials and subsequent shipments per direction of E. H. Rossell, Dept. 247.

This bulletin will not be suitable for establishment on a permanent basis until the requirements on Purchase Material Specifications, as listing in Section VIII, Information Bulletin 303, have been complied with.

PRODUCT LINE

Joint Compound

IDENTIFICATION AND PACKAGING

Package in 1 mil polyethylene-lined USG All Purpose Joint Compound bag per Bulletin 7-16-11-3, with the suffix N following the code.

FINISHED PRODUCT SPECIFICATIONS

Color	-	Natural White unless ordered pigmented.
Consistency	-	55 to 59 cc (57 cc normal).
Viscosity	-	530 ± 30 HB units at 75°F with pin paddle.
pH	-	8.2 to 8.6 (8.4 normal).
Bond	-	4 minimum.

- 0 -

special bulletin

Operating Division PRODUCT PROCEDURE Approved:	**CONFIDENTIAL** DO NOT REPRODUCE OR COPY USG JOINT COMPOUND - ALL PURPOSE (AP-372)	No. 61-2-11-3-N Date 11-18-70 Page 2 Cancels Page 2 Dated 12-30-69

FORMULA — AP-372

	GP-702		1.66%
	Santicizer #9		0.16
	JM/RFO2	about	4.5
	Mica JC	per formula V	
	Nopco PD-1		0.3
C	Carbonate Filler (See Note 1)	to make	100%
	Gelvatol 20-60 B. P.		0.83
	Sorbitol		0.5
	Glyoxal (80% crystalline)		0.5
C	Thickener (See Note 2)		0.5
	Ziram		0.1

A NOTE 1: Chamblee to use #9NCS, Montreal and Hagersville to use Pulpro White #1 or A Dolomite.

A NOTE 2: Chamblee to use Natrosol 250 KX, Montreal and Hagersville to use Natrosol 250 KXR (SG-68)

RAW MATERIALS

GP-702	PMS 6-104-18-1
Santicizer #9 (-40 mesh)	PMS 6-93-2
Gelvatol 60-60 B.P. (-70 mesh)	Monsanto Co.
Crystalline Sorbitol (Powder)	Atlas Chemical, Chas. Pfizer
Glyoxal (80% crystalline, 100% - 50 mesh)	Centerchem. Inc., N.Y., N.Y.
Natrosol 250KX	Hercules, Inc.
Nopco PD-1	Nopco Chemical Co.

Other raw materials per Bulletin 61-2-11-3.

MANUFACTURING PROCEDURE

Prior to making this product, a thorough brushing down of the Broughton mixer must be made followed by a clean-out charge of carbonate filler. Contamination with Perf-A-Tape Joint Compounds, especially those containing ammonium pentaborate is to be avoided.

END

AP006 2249

Operating Division PRODUCT PROCEDURE Approved:	**CONFIDENTIAL** DO NOT REPRODUCE OR COPY USG JOINT COMPOUND ALL PURPOSE AP-275B	No. 61-2-11-3-1 Date 10-2-70 Page 3 Cancels Page 3 Dated 8-6-70

FORMULA (AP-275-B)

	AP-275-B
CEA 216	1.5%
B 329	4.0
Gum Arabic (powd.)	.5
Tylose UM 4000 P (Note 2)	.6
C Ziram	0.15
Mica JC	Per Formula V
7RF02 Asbestos	As Req'd for consistency control - 2.5% in lab batches.
7RF9 Asbestos (Note 3)	3.0
Flo Float JF (Note 1)	To make 100%
Nopco PD-1	0.3%

Note 1: Midway use #9NCS per PMS 6-24-9.
Note 2: Dallas to use GM-05 in place of Tylose.
Note 3: Dallas to use 7RF02 asbestos only.

RAW MATERIALS

Nopco PD-1	- A dry powder defoamer from Nopco Chemical Co., Chicago, Ill.
CEA 216	- A special starch binder from Hercules Inc.
B 329*	- Per Bulletin 6-124-10
Gum Arabic	- #2 sorts ground to pass 60 mesh practically 100%.
D Tylose UM 4000 P	- Per Bulletin 6-25-5.
Mica JC	- Per Bulletin 6-143-1.
Asbestos 7RF02 and 7RF9	- Per Bulletin 6-14-5.
Flo Float JF	- Per Bulletin 6-24-9.
A Ziram	- Per Bulletin 6-100-11

* Raw material testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

This compound is borate sensitive, hence should be run after AP-100 or other non-borate containing compounds, and then with the equipment well brushed down. Weighing, mixing, and Mikropulverizing are the same as for otter joint compounds.

QUALITY CONTROL

Per 61-2-26 and 61-2-22.

END

DP007 0168

Operating Division	CONFIDENTIAL	No. 01-2-11-3-1
PRODUCT PROCEDURE	DO NOT REPRODUCE OR COPY	Date 8-6-70
Approved:	USG JOINT COMPOUND ALL PURPOSE AP-275B	Page 3
		Cancels Page 3
		Dated 6-2-70

FORMULA (AP-275-B)

	AP-275-B
CMC 216	1.5%
B 329	4.0
Gum Arabic (powd.)	.5
A Tylose GR 4000 P (Note 2)	.6
Advacide WJP	.1
Dicyandiamine	.7
Mica JC	Per Formula V
7RF02 Asbestos	As Req'd for consistency control - 2.5% in lab batches.
C 7RF9 Asbestos (Note 3)	3.0
Flo Float JF (Note 1)	To make 100%
Nopco PD-1	0.3%

Note 1: Midway use WJCS per PMP 6-24-9.
A Note 2: Dallas to use GR-65 in place of Tylose.
A Note 3: Dallas to use 7RF02 asbestos only.

RAW MATERIALS

Nopco PD-1	- A dry powder defoamer from Nopco Chemical Co., Chicago, Ill.
CMC 216	- A special starch binder from Hercules Inc.
B 329*	- Per Bulletin 6-124-10
Gum Arabic	- #2 sorts ground to pass 60 mesh practically 100%.
Dicyandiamide	- Per Bulletin 6-44-1.
Tylose GR 4000 P	- Per Bulletin 6-25-5.
Advacide WJP	- 6-100-12
Mica JC	- Per Bulletin 6-143-1.
Asbestos 7RF02 and 7RF9	- Per Bulletin 6-14-5.
Flo Float JF	- Per Bulletin 6-24-9.

* Raw material testing Procedures per PMP 12-45.

MANUFACTURING PROCEDURE

This compound is borate sensitive, hence should be run after AP-100 or other non-borate containing compounds, and then with the equipment well brushed down. Weighing, mixing, and Hi-Pro-Pulverizing are the same as for other joint compounds.

QUALITY CONTROL

Per 01-2-26 and 01-2-22.

END

DP007 01

C Indicates Change
A Indicates Addition

Operating Division PRODUCT PROCEDURE Approved:	USG JOINT COMPOUND ALL PURPOSE AP-275B	No. 61-2-11-3-1 Date 8-23-71 Page 3 Cancels Page 3 Dated 10-2-70

FORMULA (AP-275-B)

	AP-275-B
CEA 216	1.5%
C Staramick 329	4.0
Gum Arabic (powd.)	.5
Tylose UM 4000 P (Note 2)	.6
Ziram	0.15
Mica JC	Per Formula V
7RF02 Asbestos	As Req'd for consistency control - 2.5% in lab batches.
7RF9 Asbestos (Note 3)	3.0
Flo Float JF (Note 1)	To make 100%
Nopco PD-1	0.3%

Note 1: Midway use #9NCS per PMS 6-24-9.
Note 2: Dallas to use GM-65 in place of Tylose.
Note 3: Dallas to use 7RF02 asbestos only.

RAW MATERIALS

C Nopco PD-1	- Per PMS 6-40-21.
CEA 216	- A special starch binder from Hercules Inc.
C Staramick 329*	- Per Bulletin 6-124-10
Gum Arabic	- #2 sorts ground to pass 60 mesh practically 100%.
Tylose UM 4000 P	- Per Bulletin 6-25-5.
Mica JC	- Per Bulletin 6-143-1.
Asbestos 7RF02 and 7RF9	- Per Bulletin 6-14-5.
Flo Float JF	- Per Bulletin 6-24-9.
Ziram	- Per Bulletin 6-100-11

* Raw material testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

This compound is borate sensitive, hence should be run after AP-100 or other non-borate containing compounds, and then with the equipment well brushed down. Weighing, mixing, and Mikropulverizing are the same as for otter joint compounds.

QUALITY CONTROL

Per 61-2-26 and 61-2-22.

END

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M-5791 1/63 (Printed in U.S.A.)

C Indicates Change

DP007 0163

Operating Division PRODUCT PROCEDURE Approved:	USG JOINT COMPOUND ALL PURPOSE AP-259A	No. 61-2-11-3 Date 8-23-71 Page 3 Cancels Page 3 Dated 5-7-69

FORMULA (AP-259-A)

	BN-13	- 2.0%
C	Staramick 329	- 3.0
	GP-702	- 1.0
	Gum Arabic No. 2 Tech. Grade	- 0.2
	Santicizer #9	- 0.1
	GM-65	- 0.4
	Zinc Oxide	- 0.1
	Ziram 95% Technical	- 0.15
	JM7FR02 Asbestos	- 4.5 (As Required)
	Narvon CE-F-1	- 15.0
	Mica P-85	- (Per Formula V)
	Carbonate Filler (1)	- (To Make 100%)
	Ferrite Yellow	- (Approx. 0.1 as Required)

(1) A Dolomite or #325 Mineral Filler.

RAW MATERIALS

	A. BN-13*	- PMS 6-124-9
C	B. Staramick 329*	- PMS 6-124-10
	C. GP-702	- Monsanto
	D. Gum Arabic	- #2 Tech. Grade.
	E. Santicizer #9	- 6-98-2
	F. GM-65*	- Dow Chemical Co.
	G. Carbonate Filler	- PMS 6-24-17.
	H. Ziram 95% Technical Grade	- PMS 6-100-11

* Raw Material Testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

Per Bulletin 61-2-26 except a thorough brushing down, followed by a cleanout charge of carbonate filler must be run before this product is made. (No cleanout is necessary afterwards as this product will not contaminate regular casein compounds.)

END

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M-5791 1/63 (Printed in U.S.A.)

C Indicates Change

AP006 2070

Originally issued 12-30-69 · SPECIAL BULLETIN 1st Extension

Operating Division PRODUCT PROCEDURE Approved:	USG JOINT COMPOUND-ALL PURPOSE (AP - 372)	No. 61-2-11-3-N Date 8-18-71 Page Page 1 Cancels Page 1 Dated 5-21-71

This bulletin expires 1-1-72.

DESCRIPTION

Plants to manufacture USG Joint Compound All-Purpose formula AP372 for field trials and subsequent shipments per direction of Division Product Managers.

This bulletin will not be suitable for establishment on a permanent basis until the requirements on Purchase Material Specifications as listing in Section VIII Information Bulletin 303, have been complied with.

MANUFACTURING PLANTS

Chamblee, Gypsum. Hagersville, Montreal and South Gate.

PRODUCT LINE

Joint Compound

IDENTIFICATION AND PACKAGING

Package in 1 mil polyethylene-lined USG All Purpose Joint Compound bag per Bulletin 7-16-11-3, with the suffix N following the code.

Hagersville Bag Construction to be:
Pasted end valved 13-1/2" x 20-1/4" (F) 3" URHV.
W/film - LOK sleeve, 2/40 NK, 1 mil PE, 1/50 semi-bleached.
Printed per standard All Purpose Joint Compound layout.

FINISHED PRODUCT SPECIFICATIONS

Color	-	Natural White unless ordered pigmented.
Consistency*	-	55 to 59 cc (57 cc normal).
Viscosity**	-	530 ± 30 BB units at 75°F with pin paddle.
C pH	-	8.6 to 9.1 (8.8 normal)
Bond	-	4 minimum.

*Hagersville only: - 57 cc
**Hagersville only: - 400 - 600 BB units at 77°F with pin paddle on VC-3 machine.

NPANA 2719

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special bulletin

No. 61-2-11-3-N Date 8-18-71 Page 2 Cancels Page 2 Dated 5-21-71	USG JOINT COMPOUND - ALL PURPOSE (AP-372)

FORMULA	AP-372
GP-702 (Notes 3 and 4)	1.66%
Santicizer #9 (Notes 3 and 4)	0.16
JM/RP02	about 4.5
Mica JC	2/3 formula V
Nopco PD-1	0.3
Carbonate Filler (See Note 1)	to make 100%
Gelvatol 20-60 B. P. (Note 4)	0.83
Sorbitol	0.5
Glyoxal (80% crystalline)	0.5
Thickener (See Note 2)	0.5
Ziram	0.1
A Hydrated Lime (See Note 5)	0.1%

NOTE 1: Chamblee to use #9NCS, Montreal and Hagersville to use Pulpro White #1 or A Dolomite.

NOTE 2: Chamblee to use Natrosol 250 KX, Montreal and Hagersville to use Natrosol 250 KXR (SG-68).

NOTE 3: Chamblee to use Vinac RP-251 @ 1.66% in place of GP702 @ 1.66% and Santicizer #9 @ 0.16%.

NOTE 4: South Gate to increase GP-702 to 2.0%, Santicizer 9 to 0.2% and Gelvatol 20-60 B.P. to 1.0%.

A NOTE 5: Hydrated Lime to be added, if required, to obtain a finished product pH of 8.6 to 9.1.

RAW MATERIALS

GP-702	PMS 6-104-18-1
Santicizer #9 (-40 mesh)	PMS 6-98-2
Gelvatol 60-60 B. P. (-70 mesh)	Monsanto Co.
Crystalline Sorbitol (Powder)	Atlas Chemical, Chas. Pfizer
Glyoxal (80% crystalline 100% - 50 mesh)	Centerchem, Inc., N.Y., N.Y.
Natrosol 250KX	Hercules, Inc.
C Nopco PD-1	PMS 6-40-21
Vinac RP-251	PMS 6-104-18
A Hydrated Lime	Bulletin 59-3-4

Other raw materials per Bulletin 61-2-11-3.

MANUFACTURING PROCEDURE

Prior to making this product, a thorough brushing down of the Broughton mixer must be made followed by a clean-out charge of carbonate filler. Contamination with Perf-A-Tape Joint Compounds, especially those containing ammonium pentaborate is to be avoided.

END

USP06_2240

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SPECIAL BULLETIN

Operating Division	USG JOINT COMPOUND-TOPPING	No. 01-2-11-2-M
PRODUCT PROCEDURE	(FE-171A)	Date 6-18-71
Approved:		Page 3
		Cancels Page 3 Dated 5-21-71

FORMULA: FE-171A

Gelva Powder (Notes 3 and 4)	1.6%
Santicizer #9 (Notes 3 and 4)	0.16
Gelvatol 20-60 BP (Note 4)	0.8
Crystalline Sorbitol	0.3
Glyoxal, 60% Crystalline	0.3
-50 Mesh	
Natrosol 250HX	0.6
Ziram	0.1
JM7RF02 Asbestos	6.0 Normal
WHC P-65 Mica	.6 Formula V
Sericite Mica (Note 1)	15.0
Carbonate Filler (Note 2)	To Make 100%
Ferrite Yellow	0.1
A Hydrated Lime (Note 5)	0.1%

Note 1: All plants to use locally available Sericite Mica.

Note 2: New Brighton to use A Dolomite. South Gate to use Marblewhite 325. Chamblee and Gypsum to use #9NCS.

Note 3: Chamblee to use Vinac RP-251 @ 1.6% in place of GP-702 @ 1.6% and Santicizer #9 @ 0.16%.

Note 4: South Gate to increase Gelva Powder to 1.8%, Santicizer 9 to 0.18% and Gelvatol 20-60 BP to 0.9%.

A Note 5: Hydrated Lime to be added if required to obtain a finished product pH of 8.6 to 9.1. Hydrated Lime at 0.1% would be the maximum required.

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No. 61-2-11-2-M Date 8-18-71 Page 4 Cancels Page 4 Dated 2-5-71	USG JOINT COMPOUND-TOPPING (FE-171A)

RAW MATERIALS

Gelva Powder 702	6-104-18-1
Santicizer #9	6-98-2
Gelvatol 20-60 BP	Monsanto
Crystalline Sorbitol (Powder)	Local Chemical Supply House
Glyoxal, 80% Crystalline (-50 Mesh)	Centerchem, Inc., New York, New York
Natrosol 250KK	Hercules Inc.
Cosan JTA-5	Cosan Chemical Corp.
PMA SEF-10	Traysan Chemical
JM7RF02 Asbestos	6-14-5
WMC P-85 Mica	6-143-3
Narvon CE-P-2	6-146-2
Astrocal M	6-146-2
A Dolomite	6-24-17
Marblewhite 325	6-24-1
Ferrite Yellow	None Required
Vinac RP-251	6-104-18
A Hydrated Lime	59-3-4

MANUFACTURING PROCEDURE

Per Bulletin 61-2-23, except must not be made on machine used for casein compounds without a thorough brushing down and cleanout charge before batch is made.

END

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USG 006 1833

A Indicates Addition

Originally issued 12-30-69 SPECIAL BULLETIN 1st Extension

Operating Division PRODUCT PROCEDURE Approved:	USG JOINT COMPOUND-ALL PURPOSE (AP - 372)	No. 61-2-11-3-N Date 5-21-71 Page Page 1 Cancels Page 1 Dated 3-30-71

This bulletin expires 1-1-72.

DESCRIPTION

C Plants to manufacture USG Joint Compound All-Purpose formula AP372 for field trials and subsequent shipments per direction of Division Product Managers.

This bulletin will not be suitable for establishment on a permanent basis until the requirements on Purchase Material Specifications as listing in Section VIII Information Bulletin 303, have been complied with.

A MANUFACTURING PLANTS

Chamblee, Gypsum. Hagersville, Montreal and South Gate.

PRODUCT LINE

Joint Compound

IDENTIFICATION AND PACKAGING

Package in 1 mil polyethylene-lined USG All Purpose Joint Compound bag per Bulletin 7-16-11-3, with the suffix N following the code.

Hagersville Bag Construction to be:
Pasted end valved 13-1/2" x 20-1/4" (F) 3" URHV.
W/film - LOK sleeve, 2/40 NK, 1 mil PE, 1/50 semi-bleached.
Printed per standard All Purpose Joint Compound layout.

FINISHED PRODUCT SPECIFICATIONS

Color	- Natural White unless ordered pigmented.
Consistency*	- 55 to 59 cc (57 cc normal).
Viscosity**	- 530 ± 30 BB units at 75°F with pin paddle.
pH	- 8.2 to 8.6 (8.4 normal).
Bond	- 4 minimum.

*Hagersville only: - 57 cc
**Hagersville only: - 400 - 600 BB units at 77°F with pin paddle on VC-3 machine.

-0-

OP006 2241

special bulletin

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG JOINT COMPOUND - ALL PURPOSE (AP-372)	No. 61-2-11-3-N Date 5-21-71 Page 2 Cancels Page 2 Dated 2-5-71

	FORMULA		AP-372
C	GP-702 (Notes 3 and 4)		1.66%
C	Santicizer #9 (Notes 3 and 4)		0.16
	JM7RF02	about	4.5
	Mica JC	2/3 formula V	
	Nopco PD-1		0.3
	Carbonate Filler (See Note 1)	to make	100%
C	Gelvatol 20-60 B. P. (Note 4)		0.83
	Sorbitol		0.5
	Glyoxal (80% crystalline)		0.5
	Thickener (See Note 2)		0.5
	Ziram		0.1

NOTE 1: Chamblee to use #9NCS, Montreal and Hagersville to use Pulpro White #1 or A Dolomite.

NOTE 2: Chamblee to use Natrosol 250 KX, Montreal and Hagersville to use Natrosol 250 KXR (SG-68).

NOTE 3: Chamblee to use Vinac RP-251 @ 1.66% in place of GP702 @ 1.66% and Santicizer #9 @ 0.16%.

A NOTE 4: South Gate to increase GP-702 to 2.0%, Santicizer 9 to 0.2% and Gelvatol 20-60 B.P. to 1.0%.

RAW MATERIALS

GP-702	PMS 6-104-18-1
Santicizer #9 (-40 mesh)	PMS 6-98-2
Gelvatol 60-60 B. P. (-70 mesh)	Monsanto Co.
Crystalline Sorbitol (Powder)	Atlas Chemical, Chas. Pfizer
Glyoxal (80% crystalline 100% - 50 mesh)	Centerchem, Inc., N.Y., N.Y.
Natrosol 250KX	Hercules, Inc.
Nopco PD-1	Nopco Chemical Co.
Vinac RP-251	PMS 6-104-18

Other raw materials per Bulletin 61-2-11-3.

MANUFACTURING PROCEDURE

Prior to making this product, a thorough brushing down of the Broughton mixer must be made followed by a clean-out charge of carbonate filler. Contamination with Perf-A-Tape Joint Compounds, especially those containing ammonium pentaborate is to be avoided.

END

0-8971-C 1/68 (Printed in U.S.A.) C Indicates Change A Indicates Addition

OP006 2242

SPECIAL BULLETIN

Operating Division	CONFIDENTIAL	No. 61-2-11-2-M
PRODUCT PROCEDURE	DO NOT REPRODUCE OR COPY	Date 5-21-71
Approved:	USG JOINT COMPOUND-TOPPING (FE-171A)	Page 3
		Cancels Page 3 Dated 2-5-71

FORMULA: FE-171A

Gelva Powder (Notes 3 and 4)	1.6%
Santicizer #9 (Notes 3 and 4)	0.16
Gelvatol 20-60 BP (Note 4)	0.8
Crystalline Sorbitol	0.3
Glyoxal, 80% Crystalline	0.3
-50 Mesh	
Natrosol 250KX	0.8
Ziram	0.1
JM7RF02 Asbestos	6.0 Normal
WMC P-85 Mica	.6 Formula V
Sericite Mica (Note 1)	15.0
Carbonate Filler (Note 2)	To Make 100%
Ferrite Yellow	0.1

Note 1: All plants to use locally available Sericite Mica.

Note 2: New Brighton to use A Dolomite. South Gate to use Marblewhite 325. Chamblee and Gypsum to use #9WCS.

Note 3: Chamblee to use Vinac RP-251 @ 1.6% in place of GP-702 @ 1.6% and Santicizer #9 @ 0.16%.

A Note 4: South Gate to increase Gelva Powder to 1.8%, Santicizer 9 to 0.18% and Gelvatol 20-60 BP to 0.9%.

D2006 1834

special bulletin

Operating Division	CONFIDENTIAL	No. 61-2-11-3-H
PRODUCT PROCEDURE	DO NOT REPRODUCE OR COPY	Date 2-5-71
Approved:	USG JOINT COMPOUND - ALL PURPOSE (AP-372)	Page 2
		Cancels Page 2
		Dated 1-20-71

FORMULA — AP-372

C	GP-702 (Note 3)	1.66%
C	Santicizer #9 (Note 3)	0.16
	JM/TFO2	about 4.5
	Mica JC	2/3 formula V
	Nopco FD-1	0.3
	Carbonate Filler (See Note 1)	to make 100%
	Gelvatol 20-60 B. P.	0.83
	Sorbitol	0.5
	Glyoxal (30% crystalline)	0.5
	Thickener (See Note 2)	0.5
	Ziram	0.1

NOTE 1: Chamblee to use #9NCS, Montreal and Hagersville to use Pulpro White #1 or A Dolomite.

NOTE 2: Chamblee to use Natrosol 250 KX, Montreal and Hagersville to use Natrosol 250 KXR (SG-68).

A NOTE 3: Chamblee to use Vinac RP-251 @ 1.66% in place of GP702 @ 1.66% and Santicizer #9 @ 0.16%.

RAW MATERIALS

GP-702	PMS 6-104-18-1
Santicizer #9 (-40 mesh)	PMS 6-93-2
Gelvatol 60-60 B.P. (-70 mesh)	Monsanto Co.
Crystalline Sorbitol (Powder)	Atlas Chemical, Chas. Pfizer
Glyoxal (30% crystalline. 100% - 50 mesh)	Centerchem. Inc., N.Y., N.Y.
Natrosol 250KX	Hercules, Inc.
A Nopco FD-1	Nopco Chemical Co.
Vinac RP-251	PMS 6-104-18

Other raw materials per Bulletin 61-2-11-3.

MANUFACTURING PROCEDURE

Prior to making this product, a thorough brushing down of the Broughton mixer must be made followed by a clean-out charge of carbonate filler. Contamination with Perf-A-Tape Joint Compounds, especially those containing ammonium pentaborate is to be avoided.

END

DP006 2241

SPECIAL BULLETIN

Operating Division	CONFIDENTIAL	No. 01-2-11-2-
PRODUCT PROCEDURE	DO NOT REPRODUCE OR COPY	Date 2-5-71
Approved:	USG JOINT COMPOUND-TOPPING (FE-171A)	Page 3
		Cancels Page 3 Dated 8-6-70

FORMULA: FE-171A

C	Gelva Powder (Note 3)	1.6%
C	Santicizer #9 (Note 3)	0.16
	Gelvatol 20-60 BP	0.8
	Crystalline Sorbitol	0.3
	Glyoxal, 80% Crystalline -50 Mesh	0.3
	Natrosol 250KX	0.8
	Ziram	0.1
	JMTRF02 Asbestos	6.0 Normal
	WHC P-65 Mica	.6 Formula V
	Sericite Mica (Note 1)	15.0
	Carbonate Filler (Note 2)	To Make 100%
	Ferrite Yellow	0.1
#	Note 1:	All plants to use locally available Sericite Mica.
	Note 2:	New Brighton to use A Dolomite. South Gate to use Marblewhite 325. Chamblee and Gypsum to use #9WCS.
A	Note 3:	**Chamblee to use Vinac RP-251 @ 1.6% in place of GP-702 @ 1.6% and Santicizer #9 @ 0.16%.**

M-8971-C Rev. 9/65 (Printed in U.S.A.) C Indicates Change
A Indicates Addition

CONFIDENTIAL
DO NOT REPRODUCE OR COPY
USG JOINT COMPOUND-TOPPING (FE-171A)

RAW MATERIALS

Gelva Powder 702	6-104-18-1
Santicizer #9	6-98-2
Gelvatol 20-60 BP	Monsanto
Crystalline Sorbitol (Powder)	Local Chemical Supply House
Glyoxal, 80% Crystalline (-50 Mesh)	Centerchem, Inc., New York, New York
Natrosol 250KX	Hercules Inc.
Cosan JTA-5	Cosan Chemical Corp.
PMA SEP-10	Traysan Chemical
JM7RF02 Asbestos	6-14-5
WMC P-85 Mica	6-143-3
Narvon CE-F-2	6-146-2
Astrocal M	6-146-2
A Dolomite	6-24-17
Marblewhite 325	6-24-1
Ferrite Yellow	None Required
A Vinac RP-251	6-104-18

MANUFACTURING PROCEDURE

Per Bulletin 61-2-23, except must not be made on machine used for casein compounds without a thorough brushing down and cleanout charge before batch is made.

END

A Ind canoe Addition

00006 1839

COMMENTS AND RECOMMENDATIONS

(Initial, indicate Dept. # and date when making comments. Then return entire file to 128-B).

Since this formula increases the raw material cost by .32/cwt, we feel sales should be restricted to the San Francisco Bay Area & this stipulation placed in Operating Bulletin.

C M Brand Jr
#147-2 - 3/21

M-5790-1 Rev. 10/71 (Printed in U.S.A.)

OP006 1877

Originally issued 12-30-69 SPECIAL BULLETIN 1st Extension

Operating Division PRODUCT PROCEDURE Approved:	USG JOINT COMPOUND - ALL PURPOSE (AP-372)	No. 61-2-11-3-N Date 1-20-71 Page 1 Cancels Page 1 Dated 11-18-70

C This bulletin expires 1-1-72.

DESCRIPTION

Chamblee Plant to manufacture trial batches of USG Joint Compound-All Purpose (AP-372) for field trials and subsequent shipments per direction of L. B. Boggs, Atlanta #981.

Montreal and Hagersville Plants to manufacture trial batches of USG Joint Compound-All Purpose (AP-372) for field trials and subsequent shipments per direction of E. H. Rossell, Dept. 247.

A Gypsum Plant to manufacture trial batches of USG Joint Compound-All Purpose (AP-372) for field trials and subsequent shipments per direction of Product Manager, CCPD, Dept. 971.

This bulletin will not be suitable for establishment on a permanent basis until the requirements on Purchase Material Specifications, as listing in Section VIII, Information Bulletin 303, have been complied with.

PRODUCT LINE

Joint Compound

IDENTIFICATION AND PACKAGING

Package in 1 mil polyethylene-lined USG All Purpose Joint Compound bag per Bulletin 7-16-11-3, with the suffix N following the code.

FINISHED PRODUCT SPECIFICATIONS

Color	-	Natural White unless ordered pigmented.
Consistency	-	55 to 59 cc (57 cc normal).
Viscosity	-	530 ± 30 BB units at 75°F with pin paddle.
pH	-	8.2 to 8.6 (8.4 normal).
Bond	-	4 minimum.

- 0 -

NP006 7745

A Indicates Addition
C Indicates Change

special bulletin

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL DO NOT REPRODUCE OR COPY USG JOINT COMPOUND - ALL PURPOSE (AP-372)	No. 61-2-11-3-[illegible] Date 1-20-71 Page 2 Cancels Page 2 Dated 11-18-70

FORMULA		AP-372
GP-702		1.66%
Santicizer #9		0.16
JM7RF02	about	4.5
C Mica JC	2/3 formula V	
Nopco PD-1		0.3
Carbonate Filler (See Note 1)	to make	100%
Gelvatol 20-60 B. P.		0.83
Sorbitol		0.5
Glyoxal (80% crystalline)		0.5
Thickener (See Note 2)		0.5
Ziram		0.1

NOTE 1: Chamblee to use #9NCS, Montreal and Hagersville to use Pulpro White #1 or A Dolomite.

NOTE 2: Chamblee to use Natrosol 250 KX, Montreal and Hagersville to use Natrosol 250 KXR (SG-68)

RAW MATERIALS

GP-702	PMS 6-104-18-1
Santicizer #9 (-40 mesh)	PMS 6-98-2
Gelvatol 60-60 B.P. (-70 mesh)	Monsanto Co.
Crystalline Sorbitol (Powder)	Atlas Chemical, Chas. Pfizer
Glyoxal (80% crystalline. 100% - 50 mesh)	Centerchem, Inc., N.Y., N.Y.
Natrosol 250KX	Hercules, Inc.
Nopco PD-1	Nopco Chemical Co.

Other raw materials per Bulletin 61-2-11-3.

MANUFACTURING PROCEDURE

Prior to making this product, a thorough brushing down of the Broughton mixer must be made followed by a clean-out charge of carbonate filler. Contamination with Perf-A-Tape Joint Compounds, especially those containing ammonium pentaborate is to be avoided.

END

OP006 2246

Original Date of Issue 6-2-72 SPECIAL BULLETIN

Operating Division	CONFIDENTIAL	No. 61-2-24-JJ
PRODUCT PROCEDURE	USG READY MIXED JOINT COMPOUND (JE-1030)	Date 7-7-72
		Page 1
C Approved:		Cancels Page 1 Dated 6-2-72

This bulletin expires 6-1-73.

DESCRIPTION

A ready mixed compound with improved resistance to cratering.

Plant to make trial batches for field tests and subsequent shipments per direction of Dept. #971-C.

MANUFACTURING PLANT

C Gypsum and Midway

IDENTIFICATION AND PACKAGING

Packaging per Bulletin 61-2-24-2-1. Normal code to be followed by the suffix C.

FINISHED PRODUCT SPECIFICATIONS

A. Color - Natural White.
B. Viscosity - 600 ± 30BB units with pin at 75°F.
C. Bond - 5 minimum.
D. Wt/Gal. - 12.8 to 13.0 lbs. per gal. for regular consistency.

FORMULA

	% NON-VOLATILE	LBS/2000 LBS. N. V.
P-80F Mica	Formula V	About 300 lbs.
JM7RF02 Asbestos	3.0	60
Cellosize QP-100M	0.8	16
C Carbonate Filler*	To make 95.0%	About 1524 lbs.
PM-4386 (60%)	5.0	167
Troysan 174	-	1
CMP Acetate	-	1

A *Midway to use Quincy #3. Gypsum to use Stonelite.

RAW MATERIALS - Per Bulletin 61-2-24-2-1 except:

Cellosize QP-100M	Union Carbide
A Stonelite	PMS 6-24-2
Quincy #3	PMS 6-24-22
CMP Acetate	PMS 6-100-5
Troysan 174	PMS 6-100-14

MANUFACTURING PROCEDURE

Per Bulletin 61-2-24-2-1 except it is recommended that the Troysan 174 be added to the paste mix to avoid possible lumpy mixing. Make sure the mixer is stopped when the Troysan is added and the lid closed prior to restarting the mixer.

END

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Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL USG JOINT COMPOUND ALL PURPOSE AP-275B	No. 61-2-11-3-1 Date 6-9-72 Page 3 Cancels Page 3 Dated 4-19-72

FORMULA (AP-275-B)

		AP-275-B
	CEA 216	1.5%
	Staramic 329	4.0
	Gum Arabic (powd.)	.5
	GM-65	.6
	Ziram	0.15
	Mica JC	Per Formula V
C	TRF02 Asbestos (Note 3)	As Req'd for consistency control - 2.5% in lab batches.
	TRF9 Asbestos (Note 3)	3.0
	Flo Float JF (Note 1) (Note 4)	To make 100%
	Nopco PD-1 (Note 2)	0.3%

Note 1: Midway use Quincy #3.
Note 2: Gypsum to omit Nopco PD-1 in 5 lb., 60 ft. systems and in 250 ft. system.
C Note 3: Dallas to use TRF02 only. Midway to use Carey TRF66 only.
Note 4: Gypsum to use Stonelite Filler in 5 lb., 60 ft. systems, 250 ft. system and pigmented compound.

RAW MATERIALS

Nopco PD-1	-Per PMS 6-40-21.
CEA 216	- A special starch binder from Hercules Inc.
Staramic 329*	- Per Bulletin 6-124-10
Gum Arabic	- #2 sorts ground to pass 60 mesh practically 100%.
	- Per Bulletin 6-151-16
Mica JC	- Per Bulletin 6-143-1.
C Asbestos	- Per Bulletin 6-14-5, and 6-14-10
Flo Float JF	- Per Bulletin 6-24-9.
Ziram	- Per Bulletin 6-100-11
Stonelite	- Per Bulletin 6-24-2.
Quincy	- Per PMS 6-24-22

* Raw material testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

This compound is borate sensitive, hence should be run after AP-100 or other non-borate containing compounds, and then with the equipment well brushed down. Weighing, mixing, and Mikropulverizing are the same as for otter joint compounds.

QUALITY CONTROL

Per 61-2-26 and 61-2-22.

END

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OP007 0160

Operating Division PRODUCT PROCEDURE Approved:	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE AP-275B	No. 61-2-11-3-1 Date 4-19-72 Page 3 Cancels Page 3 Dated 3-28-72

FORMULA (AP-275-B)

		AP-275-B
	CEA 216	1.5%
	Staramic 329	4.0
	Gum Arabic (powd.)	.5
C	GM-65	.6
	Ziram	0.15
	Mica JC	Per Formula V
	TRF02 Asbestos	As Req'd for consistency control - 2.5% in lab batches.
	TRF9 Asbestos (Note 3)	3.0
C	Flo Float JF (Note 1) (Note 4)	To make 100%
C	Nopco PD-1 (Note 2)	0.3%

Note 1: Midway use Quincy #3.

C Note 2: Gypsum to omit Nopco PD-1 in 5 lb., 60 ft. systems and in 250 ft. system.

Note 3: Dallas to use TRF02 asbestos only.

A Note 4: Gypsum to use Stonelite Filler in 5 lb., 60 ft. systems, 250 ft. system and pigmented compound.

RAW MATERIALS

Nopco PD-1	-Per PMS 6-40-21.
CEA 216	- A special starch binder from Hercules Inc.
Staramic 329*	- Per Bulletin 6-124-10
Gum Arabic	- #2 sorts ground to pass 60 mesh practically 100%.
C	- Per Bulletin 6-151-16
Mica JC	- Per Bulletin 6-143-1.
Asbestos TRF02 and TRF9	- Per Bulletin 6-14-5.
Flo Float JF	- Per Bulletin 6-24-9.
Ziram	- Per Bulletin 6-100-11
A Stonelite	- Per Bulletin 6-24-2.
Quincy	- Per PMS 6-24-22

* Raw material testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

This compound is borate sensitive, hence should be run after AP-100 or other non-borate containing compounds, and then with the equipment well brushed down. Weighing, mixing, and Mikropulverizing are the same as for otter joint compounds.

QUALITY CONTROL

Per 61-2-26 and 61-2-22.

END

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DP007 0161

No. 61-2-11-3-N Date 4-12-72 Page 2 Cancels Reinstated Dated	# CONFIDENTIAL USG JOINT COMPOUND - ALL PURPOSE (AP-372)

FORMULA	AP-372
GP-702 (Notes 3 & 4)	1.66%
Santicizer #9 (Notes 3 & 4)	0.16
JMTRF02	about 4.5
Mica JC	2/3 formula V
Nopco PD-1	0.3
Carbonate Filler (See Note 1)	to make 100%
Gelvatol 20-60 B.P. (Note 4)	0.83
Sorbitol	0.5
Glyoxal (80% crystalline)	0.5
Thickener (See Note 2)	0.5
Ziram	0.1
Hydrated Lime (See Note 5)	0.1

NOTE 1: Chamblee to use #9NCS, Montreal and Hagersville to use Pulpro White #1 or A Dolomite.
NOTE 2: Chamblee to use Natrosol 250 KX, Montreal and Hagersville to use Natrosol 250 KXR (SG-68).
NOTE 3: Chamblee to use Vinac RP-251 @ 1.66% in place of GP702 @ 1.66% and Santicizer #9 @ 0.16%.
NOTE 4: South Gate to increase GP-702 to 2.0%, Santicizer 9 to 0.2% and Gelvatol 20-60 B.P. to 1.0%.
NOTE 5: Hydrated Lime to be added, if required, to obtain a finished product pH of 8.6 to 9.1.

RAW MATERIALS

GP-702	PMS 6-104-18-1
Santicizer #9 (-40 mesh)	PMS 6-98-2
Gelvatol 60-60 B.P. (-70 mesh)	Monsanto Co.
Crystalline Sorbitol (Powder)	Atlas Chemical, Chas. Pfizer
Glyoxal (80% crystalline 100% - 50 mesh)	Centerchem, Inc., N.Y., N.Y.
Natrosol 250KX	Hercules, Inc.
Nopco PD-1	PMS 6-40-21
Vinac RP-251	PMS 6-104-18
Hydrated Lime	Bulletin 59-3-4

Other raw materials per Bulletin 61-2-11-3.

MANUFACTURING PROCEDURE

Prior to making this product, a thorough brushing down of the Broughton mixer must be made followed by a clean-out charge of carbonate filler. Contamination with Perf-A-Tape Joint Compounds, especially those containing ammonium pentaborate is to be avoided.

END

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USP006 2236

Operating Division PRODUCT PROCEDURE Approved:	CONFIDENTIAL USG JOINT COMPOUND ALL PURPOSE AP-275B	No. 61-2-11-3-1 Date 3-28-72 Page 3 Cancels Page 3 Dated 8-23-71

FORMULA (AP-275-B)

	AP-275-B
CEA 216	1.5%
Staramick 329	4.0
Gum Arabic (powd.)	.5
Tylose UM 4000 P (Note 2)	.6
Ziram	0.15
Mica JC	Per Formula V
7RF02 Asbestos	As Req'd for consistency control - 2.5% in lab batches.
7RF9 Asbestos (Note 3)	3.0
Flo Float JF (Note 1)	To make 100%
Nopco PD-1	0.3%

C Note 1: Midway use Quincy #3.
Note 2: Dallas to use GM-65 in place of Tylose.
Note 3: Dallas to use 7RF02 asbestos only.

RAW MATERIALS

Nopco PD-1	-Per PMS 6-40-21.
CEA 216	- A special starch binder from Hercules Inc.
Staramick 329*	- Per Bulletin 6-124-10
Gum Arabic	- #2 sorts ground to pass 60 mesh practically 100%.
Tylose UM 4000 P	- Per Bulletin 6-25-5.
Mica JC	- Per Bulletin 6-143-1.
Asbestos 7RF02 and 7RF9	- Per Bulletin 6-14-5.
Flo Float JF	- Per Bulletin 6-24-9.
Ziram	- Per Bulletin 6-100-11
A Quincy	- Per PMS 6-24-22

* Raw material testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

This compound is borate sensitive, hence should be run after AP-100 or other non-borate containing compounds, and then with the equipment well brushed down. Weighing, mixing, and Mikropulverizing are the same as for otter joint compounds.

QUALITY CONTROL

Per 61-2-26 and 61-2-22.

END

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DP007 0162

Operating Division PRODUCT PROCEDURE Approved:	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE - (AP-433)	No. 61-2-11-3-S Date 2-28-72 Page 1 Cancels NEW Dated

This bulletin expires 1 year from date of issue. 5-1-73

Plant to manufacture for field tests and subsequent shipments as directed by Division Product Manager of S.C.P.D.

DESCRIPTION

A low cost micaless all purpose joint compound containing Southard terra alba as the filler.

MANUFACTURING PLANT Dallas

IDENTIFICATION AND PACKAGING

Bags per Bulletin 7-16-11-3. Normal code to be followed by the suffix T.

FINISHED PRODUCT SPECIFICATIONS

A. Consistency - 53 to 56 cc for 530±30 Brabender units.
B. pH - 8.6 to 9.0 (8.8 normal).
C. Bond - 4 minimum (must be dried 24 hours at 75°F - 50% R.H.). Do not dry in hot room or oven.
D. Color - Natural White.

FORMULA	AP-433
JM7RF02	About 4.5%
Ziram	0.15
Hamaco 620	3.0
Titanox RA-50	1.0
TSPP	0.1
Gelvatol 20-60 B.P.	0.5
Glyoxal (80% crystalline)	0.3
Sorbitol (crystalline-powder)	0.3
GM-65	0.5
Southard #1 terra alba to make	100%

RAW MATERIALS	
Hamaco 620	A.E. Staley Co., Decatur, Ill.
Ziram (95% Tech. Grade)	PMS 6-100-11
JM7RF02	6-14-5
Titanox RA-50	6-130-1
TSPP	6-177-4
Gelvatol 20-60 B.P.	Monsanto Co.
Glyoxal	Centerchem, Inc.
Sorbitol	Chas. Pfizer, Atlas Chemical
GM-65	6-151-16
Southard #1 terra alba	52-22-2

NP006 2264

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0-5791-C 1/68 (Printed in U.S.A.) T

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE (AP-275-C)	No. 61-2-11-3-5 Date 12-18-73 Page 2 Cancels NEW Dated

FORMULA

Raw Material No.	Raw Material	% or PMS
65760	GP 702 (Note 1)	2.5%
65762	Gelvatol 6000	0.83%
66458	Methocel 228	0.5
66683	Ziram	0.1
66358	TSPP	0.15
61060	TiO_2-R901 (Note 2)	0.5
61741	7RF02 Asbestos	4.5
		(As Required)
61747	P80F Mica	5.0
61466	Microfil #4 (Note 3)	To make 100%
67061	Sorbitol	0.3

NOTE 1 Chamblee to use Vinac RP-251.
NOTE 2 Chamblee to omit TiO_2-R901.
NOTE 3 Chamblee to use Georgia Marble #9NCS instead of Microfil #4.

RAW MATERIALS

Same as per Bulletin 61-2-11-5-1 except:

Raw Material No.	Raw Material	PMS
66358	TSPP	PMS 6-177-4
61060	TiO_2-R901	PMS 6-130-8
61466	Microfil #4	PMS 6-24-10
65760	GP-702	PMS 6-104-18-1
65762	Gelvatol 6000	PMS 6-3-6
66683	Ziram	PMS 6-100-11
61741	7RF02 Asbestos	PMS 6-14-10
61747	P-80F Mica	PMS 6-143-1
67061	Sorbitol	PMS
66458	Methocel 228	PMS 6-151-16

MANUFACTURING PROCEDURE

Same as per Bulletin 61-2-11-5-1.

END

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Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND - ALL PURPOSE (AP-372)	No. 61-2-11-3-4 Date 12-19-73 Page 2 Cancels Page 2 Dated 11-20-73

FORMULA **AP-372**

MATERIAL No.		South Gate
65765	Vinac RP251	2.0%
61741 or	JMTRF02 Asbestos	about 4.5
61682	TRF-66	
61747	WMC Mica P-80F	1/2 formula V
61759	Mica S	5.3
65762	Gelvatol 6000	1.0
67061	Crys. Sorbitol (Powder)	0.5
67946	Glyoxal, 80% Crys.(-50mesh)	0.5
66484	Natrosol 250 KX	0.5
Note 1	Preservative (Note 1)	0.1
61561 or	Hydrated Lime	See Note 2
61581		
61455	Carbonate Filler, MW325	To make 100%

Note 1: Either material permissible No. 66683 (Ziram) or No. 66688 (Vancide MZ96).
Note 2: Hydrated Lime to be added, if required, to obtain a finished product pH of 8.6 to 9.1.

RAW MATERIALS

65765	Vinac RP251	PMS 6-104-18
61741	JMTRF02 Asbestos	PMS 6-14-5
61747	WMC Mica P-80F	58-61-1
65762	Gelvatol 6000	PMS 6-3-6
67061	Crys. Sorbitol (Powder)	Chas. Pfizer or Atlas Chemical
67946	Glyoxal, 80% Crys.(-50 mesh)	6-66-1
66484	Natrosol 250KX	6-151-1
66683	Ziram	PMS 6-100-11
66688	Vancide MZ96	PMS 6-100-11
61561 or		
61581	Hydrated Lime	PMS 6-104-18
61455	MW325 Carbonate	PMS 6-24-1
61759	Mica S	PMS 6-143-5
61682	TRF-66 Asbestos	PMS 6-14-10

MANUFACTURING PROCEDURE

Contamination of this product with any of those containing casein and/or ammonium petaborate muse be avoided. A thorough brush down and a charge of carbonate filler of the mixer must be made if contamination is expected. Weigh all materials accurately. Maximum permissible weight departure is 3% of the total batch size. Mix in a Broughton or Day Nauta mixer until completely blended.

After blending is complete, pass the batch through a Mikropulverizer using a coarse (3/32" slot width) screen. It is then ready for packing.

END

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0P006 2376

SPECIAL BULLETIN

61-2-26

Operating Division Approved:	USG Joint Compound All-Purpose AP-399	No. 61-2-24 Date 12/28/73 Page 1 Cancels Dated

DESCRIPTION: A non-casein all-purpose joint compound.

MANUFACTURING PLANT: New Brighton

PACKAGING: 25 lb. bags per Bulletin 7-16-11-3

SHIPMENTS: On all orders for USG All-Purpose Joint Compounds

FINISHED PRODUCT SPECIFICATIONS:

Consistency - 55-59 cc. (57 normal) for 500-560 Brabender units
pH - 8.2 to 8.6
Bond - Oven dried at 110°-120°F., 6 minimum

FORMULA	AP-399
Vinac RP251	1.7%
Gelvatol 6000	0.85
Soluble Glyoxal Powder	0.3
Crystalline Sorbitol Powder	0.3
Natrosol 250KX	0.5
Vancide MZ-96	0.1
JM7RF02 Asbestos	ca. 6.5
P80F Mica	10.0
FP Limestone	To make 100%
Mapico Yellow 1000	0.1
Nopco PD #1	0.3

RAW MATERIALS

Material Code No.	Material Name	PMS
65765	Vinac RP251	6-104-18
65762	Gelvatol 6000	6-3-6
67946	Soluble Glyoxal Powder	6-66-1
67061	Crystalline Sorbitol Powder	Chas. Pfizer, Atlas Chemical
66484	Natrosol 250KX	6-151-13
66677	Vancide MZ-96	6-100-11
61741	JM7RF02 Asbestos	6-14-5
61747	P80F Mica	6-143-1
61567	FP Limestone	6-24-23
60245	Mapico Yellow 1000	6-94-8
66179	Nopco PD #1	6-40-21

MANUFACTURING PROCEDURE: Per Bulletin 61-2-22

UP006 2431

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND - ALL PURPOSE (AP-372)	No. 61-2-11-3-4 Date 9-17-73 Page 2 Cancels Page 2 Dated 7-31-73

FORMULA AP-372

MATERIAL

	No.		Chamblee	South Gate
	65765	Vinac RP251	1.66%	2.0%
	61741 or 61682	JM7RF02 Asbestos 7RF-66	about 4.5	about 4.5
	61747	WMC Mica P-80F	2/3 formula V	1/2 formula V
	61759	Mica S	-	5.3
	66179	Nopco PD-1	0.3	---
C	65762	Gelvatol 6000	0.83	1.0
	67061	Crys. Sorbitol (Powder)	0.5	0.5
	67946	Glyoxal, 80% Crys.(-50mesh)	0.5	0.5
	66484	Natrosol 250 KX	0.5	0.5
	Note 1	Preservative (Note 1)	0.1	0.1
	61561 or 61581	Hydrated Lime	See Note 2	See Note 2
		Carbonate Filler (Note 3)	To make 100%	To make 100%

Note 1: Either material permissible No. 66683 (Ziram) or No. 66688 (Vancide MZ96).
Note 2: Hydrated Lime to be added, if required, to obtain a finished product pH of 8.6 to 9.1.
Note 3: Chamblee to use No. 61453 (#9NCS) and South Gate to use No. 61455 (MW325).

RAW MATERIALS

	65765	Vinac RP251	PMS 6-104-18
	61741	JM7RF02 Asbestos	PMS 6-14-5
	61747	WMC Mica P-80F	58-61-1
	66179	Nopco PD-1	PMS 6-40-21
C	65762	Gelvatol 6000	PMS 6-3-6
	67061	Crys. Sorbitol (Powder)	Chas. Pfizer or Atlas Chemical
	67946	Glyoxal, 80% Crys.(-50 mesh)	Centerchem, Inc., N.Y.
	66484	Natrosol 250KX	6-151-1
	66683	Ziram	PMS 6-100-11
	66688	Vancide MZ96	PMS 6-100-11
	61561 or 61581	Hydrated Lime	PMS 6-104-18
	61453	#9NCS Carbonate	PMS 6-24-9
	61455	MW325 Carbonate	PMS 6-24-1
	61759	Mica S	PMS 6-143-5
	61682	7RF-66 Asbestos	PMS 6-14-10

MANUFACTURING PROCEDURE

Contamination of this product with any of those containing casein and/or ammonium petaborate must be avoided. A thorough brush down and a charge of carbonate filler of the mixer must be made if contamination is expected. Weigh all materials accurately. Maximum permissible weight departure is 3% of the total batch size. Mix in a Broughton or Day Mauta mixer until completely blended.

After blending is complete, pass the batch through a Mikropulverizer using a coarse (3/32" slot width) screen. It is then ready for packing.

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USP006 2180

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND - ALL PURPOSE (AP-372)	No. 61-2-11-3-4 Date 7-31-73 Page 2 Cancels Page 2 Dated 4-20-73

FORMULA AP-372

MATERIAL

		Chamblee	South Gate
65765	Vinac RP251	1.66%	2.0%
61741 or	JMTRF02 Asbestos	about 4.5	about 4.5
A 61682	TRF-66		
61747	WMC Mica P-80F	2/3 formula V	1/2 formula V
61759	Mica S	-	5.3
66179	Nopco PD-1	0.3	—
65762	Gelvatol 6000EP	0.83	1.0
67061	Crys. Sorbitol (Powder)	0.5	0.5
67946	Glyoxal, 80% Crys.(-50mesh)	0.5	0.5
66484	Natrosol 250 KX	0.5	0.5
Note 1	Preservative (Note 1)	0.1	0.1
61561 or 61581	Hydrated Lime	See Note 2	See Note 2
	Carbonate Filler (Note 3)	To make 100%	To make 100%

Note 1: Either material permissible No. 66683 (Ziram) or No. 66688 (Vancide MZ96).
Note 2: Hydrated Lime to be added, if required, to obtain a finished product pH of 8.6 to 9.1.
Note 3: Chamblee to use No. 61453 (#9NCS) and South Gate to use No. 61455 (MW325).

RAW MATERIALS

65765	Vinac RP251	PMS 6-104-18
61741	JMTRF02 Asbestos	PMS 6-14-5
61747	WMC Mica P-80F	58-61-1
66179	Nopco PD-1	PMS 6-40-21
65762	Gelvatol 6000EP	PMS 6-3-6
67061	Crys. Sorbitol (Powder)	Chas. Pfizer or Atlas Chemical
67946	Glyoxal, 80% Crys.(-50 mesh)	Centerchem, Inc., N.Y.
66484	Natrosol 250KX	6-151-1
66683	Ziram	PMS 6-100-11
66688	Vancide MZ96	PMS 6-100-11
61561 or 61581	Hydrated Lime	PMS 6-104-18
61453	#9NCS Carbonate	PMS 6-24-9
61455	MW325 Carbonate	PMS 6-24-1
61759	Mica S	PMS 6-143-5
A 61682	TRF-66 Asbestos	PMS 6-14-10

MANUFACTURING PROCEDURE

Contamination of this product with any of those containing casein and/or ammonium petaborate must be avoided. A thorough brush down and a charge of carbonate filler of the mixer must be made if contamination is expected. Weigh all materials accurately. Maximum permissible weight departure is 3% of the total batch size. Mix in a Broughton or Day Nauta mixer until completely blended.

After blending is complete, pass the batch through a Mikropulverizer using a coarse (3/32" slot width) screen. It is then ready for packing.

END

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USG 906 2182

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE AP-275B	No. 61-2-11-3-1 Date 6-26-73 Page 3 Cancels Page 3 Dated 5-22-73

FORMULA (AP-275-B)

		AP-275-B
C	CEA 216 C	1.5%
	Staramic 329	4.0
	Gum Arabic (powd.)	.5
	GM-65	.6
	Preservative	0.15
	Mica JC (Note 5)	Per Formula V
	TRF02 Asbestos (Note 3)	As Req'd for consistency control - 2.5% in lab batches.
	TRF9 Asbestos (Note 3)	3.0
	Flo Float JF (Note 1) (Note 4)	To make 100%
	Nopco PD-1 (Note 2)	0.3%

Note 1: Midway use Quincy #3.
Note 2: Gypsum to omit Nopco PD-1 in 5 lb., 60 ft. systems and in 250 ft. system.
Note 3: Dallas to use TRF02 only. Midway to use Carey TRF66 only.
Note 4: Gypsum to use Stonelite Filler in 5 lb., 60 ft. systems, 250 ft. system and pigmented compound.
Note 5: Midway to use P80F Mica.

RAW MATERIALS

Nopco PD-1	- Per PMS 6-40-21.
C CEA 216 C	- A special starch binder from Hercules Inc.
Staramic 329*	- Per Bulletin 6-124-10
Gum Arabic	- #2 sorts ground to pass 60 mesh practically 100%.
	- Per Bulletin 6-151-16
Mica JC	- Per Bulletin 6-143-1.
Asbestos	- Per Bulletin 6-14-5, and 6-14-10
Flo Float JF	- Per Bulletin 6-24-9.
Preservative	- Per Bulletin 6-100-11
Stonelite	- Per Bulletin 6-24-2
Quincy	- Per PMS 6-24-22

* Raw material testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

This compound is borate sensitive, hence should be run after AP-100 or other non-borate containing compounds, and then with the equipment well brushed down. Weighing, mixing, and Mikropulverizing are the same as for otter joint compounds.

QUALITY CONTROL

Per 61-2-26 and 61-2-22.

END

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DP007 0150

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE (AP-275-C)	No. 61-2-11-3-U Date 6-18-73 Page 2 Cancels Page 2 Dated 4-20-73

FORMULA

CP 702 (Note 1)	2.5%
Gelvatol 20-60 (Note 2)	0.83
CM 65	0.5
Ziram	0.1
TSPP	0.15
TiO_2-R901 (Note 3)	0.5
TRF02 Asbestos	4.5 (As Required)
P80F Mica	5.0
Microfil #4 (Note 4)	To make 100%
Sorbitol	0.3

C NOTE 1 Chamblee to use Vinac RP-251.
C NOTE 2 Chamblee to use Gelvatol 6000.
NOTE 3 Chamblee to omit TiO_2-R901.
NOTE 4 Chamblee to use Georgia Marble #9NCS instead of Microfil #4.

RAW MATERIALS

Same as per Bulletin 61-2-11-5-1 except:

TSPP	PMS 6-177-4
TiO_2-R901	PMS 6-130-8
Microfil #4	PMS 6-24-10

MANUFACTURING PROCEDURE

Same as per Bulletin 61-2-11-5-1.

END

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USG 006 2771

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE (AP-275-B)	No. 61-2-11-3-1 Date 5-22-73 Page 1 Cancels Page 1 Dated 3-28-73

Dallas, Gypsum and Midway Plants to manufacture and ship a non-casein type All Purpose Joint Compound, AP-275-B, per the following specifications.

Packaging - Bags per 7-16-11-3.

5 lb.	- Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie.) per PMS 8-10-10 in master carton per PMS 8-10-23.
60 Ft. System With Knives	- Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie.) per PMS 8-13-2 in master carton per PMS 8-10-23.
60 Ft. System Without Knives	- Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie.) per PMS 8-13-1, in master carton per PMS 8-10-23.
250' System	- Bag per Bulletin 7-16-36.

C J-2 direction folder is to be included in each of the 5# 60' with and 60' without knives, and 250' system packages. (Midway to omit J-2 Direction Folder).

Shipment

USG Joint Compound - All Purpose or on orders calling for non casein or H formula All Purpose Compound.

Gypsum to place the letter H after the code for identification.

Note: Color to be unpigmented natural white unless pigmented (Manila) color is specified on the order, on shipments from Dallas and Gypsum.

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DP007 0153

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE (AP-275-B)	No. 61-2-11-3-1 Date 5-22-73 Page 2 Cancels Page 2 Dated 1-19-71

FINISHED PRODUCT SPECIFICATIONS

Color	- Unpigmented unless pigmented (Manila or Yellow) is specified on the order. - MIDWAY NOTE Midway to only produce unpigmented. Pigmented may be specially ordered with five days lead time to produce and the C.C.P.D. Product Manager's Approval; these orders must be in batch increments of 3,000 lbs.
Consistency	- 64 to 67 cc at 525 BB, 75°F, 15 min. after mixing, 75 RPM with pin paddle and 250 cm. gm. torque head in Brabender Viscometer.
pH	- 8.6 to 8.9
Bond	- 5 minimum when dried at less than 60% R.H. (Midway to use hot room at 90°F + 10% R.H.).
Mixing and Application	- To match standard sample from Research.
Lumps or Grit	- None permitted.

A

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DP007 0154

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE AP-275B	No. 61-2-11-3-1 Date 5-22-73 Page 3 Cancels Page 3 Dated 6-9-72

FORMULA (AP-275-B)

		AP-275-B
	CEA 216	1.5%
	Staramic 329	4.0
	Gum Arabic (powd.)	.5
	GM-65	.6
C	Preservative	0.15
C	Mica JC (Note 5)	Per Formula V
	7RF02 Asbestos (Note 3)	As Req'd for consistency control - 2.5% in lab batches.
	7RF9 Asbestos (Note 3)	3.0
	Flo Float JF (Note 1) (Note 4)	To make 100%
	Nopco PD-1 (Note 2)	0.3%

Note 1: Midway use Quincy #3.
Note 2: Gypsum to omit Nopco PD-1 in 5 lb., 60 ft. systems and in 250 ft. system.
Note 3: Dallas to use 7RF02 only. Midway to use Carey 7RF66 only.
Note 4: Gypsum to use Stonelite Filler in 5 lb., 60 ft. systems, 250 ft. system and pigmented compound.
A Note 5: Midway to use P80F Mica.

RAW MATERIALS

Nopco PD-1	- Per PMS 6-40-21.
CEA 216	- A special starch binder from Hercules Inc.
Staramic 329*	- Per Bulletin 6-124-10
Gum Arabic	- #2 sorts ground to pass 60 mesh practically 100%.
	- Per Bulletin 6-151-16
Mica JC	- Per Bulletin 6-143-1.
Asbestos	- Per Bulletin 6-14-5, and 6-14-10
Flo Float JF	- Per Bulletin 6-24-9.
C Preservative	- Per Bulletin 6-100-11
Stonelite	- Per Bulletin 6-24-2
Quincy	- Per PMS 6-24-22

* Raw material testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

This compound is borate sensitive, hence should be run after AP-100 or other non-borate containing compounds, and then with the equipment well brushed down. Weighing, mixing, and Mikropulverizing are the same as for otter joint compounds.

QUALITY CONTROL

Per 61-2-26 and 61-2-22.

END

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DP007 0155

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE AP 469	No. 61-2-24-LL Date 5-9-73 Page 1 Cancels NEW Dated

This Bulletin expires 5-1-74.

DESCRIPTION

A low cost all purpose joint compound which has very low shrinkage.

MANUFACTURING PLANT

New Brighton

SHIPMENTS

As directed by ECPD, Dept. 991.

FINISHED PRODUCT SPECIFICATIONS

Consistency	53 to 56 cc (55 normal)
Viscosity	500 to 560 Brabender Units
Bond	4 minimum

FORMULA	AP 469
JM7RF02 Asbestos	ca 4.5%
Vancide MZ96	0.15
Staramic 620	3.0
Tetrasodiumpyrophosphate (TSPP)	0.1
Celvatol 6000	0.5
Soluble Glyoxal, powder	0.3
Crystalline Sorbitol, powder	0.3
Methocel 228	0.5
#1 Terra Alba	To make 100%

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USG 0009 1161

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND - ALL PURPOSE (AP-372)	No. 61-2-11-3-4 Date 4-20-73 Page 2 Cancels Page 2 Dated 3-28-73

FORMULA AP-372

MATERIAL

	No.		Chamblee	South Gate
	65765	Vinac RP251	1.66%	2.0%
C	61741	JM7RF02 Asbestos	about 4.5	about 4.5
C	61747	WMC Mica P-80F	2/3 formula V	1/2 formula V
C	61759	Mica S	-	5.3
	66179	Nopco PD-1	0.3	---
	65762	Gelvatol 6000BP	0.83	1.0
	67061	Crys. Sorbitol (Powder)	0.5	0.5
	67946	Glyoxal, 80% Crys.(-50mesh)	0.5	0.5
	66484	Natrosol 250 KX	0.5	0.5
	Note 1	Preservative (Note 1)	0.1	0.1
	61561 or 61581	Hydrated Lime	See Note 2	See Note 2
		Carbonate Filler (Note 3)	To make 100%	To make 100%

Note 1: Either material permissible No. 66683 (Ziram) or No. 66688 (Vancide MZ96).
Note 2: Hydrated Lime to be added, if required, to obtain a finished product pH of 8.6 to 9.1.
Note 3: Chamblee to use No. 61453 (#9NCS) and South Gate to use No. 61455 (MW325).

D

RAW MATERIALS

	65765	Vinac RP251	PMS 6-104-18
C	61741	JM7RF02 Asbestos	PMS 6-14-5
C	61747	WMC Mica P-80F	58-61-1
	66179	Nopco PD-1	PMS 6-40-21
	65762	Gelvatol 6000BP	PMS 6-3-6
	67061	Crys. Sorbitol (Powder)	Chas. Pfizer or Atlas Chemical
	67946	Glyoxal, 80% Crys.(-50 mesh)	Centerchem, Inc., N.Y.
	66484	Natrosol 250KX	6-151-1
	66683	Ziram	PMS 6-100-11
	66688	Vancide MZ96	PMS 6-100-11
	61561 or 61581	Hydrated Lime	PMS 6-104-18
	61453	#9NCS Carbonate	PMS 6-24-9
D	61455	MW325 Carbonate	PMS 6-24-1
C	61759 -	Mica S	PMS 6-143-5

MANUFACTURING PROCEDURE

Contamination of this product with any of those containing casein and/or ammonium petaborate must be avoided. A thorough brush down and a charge of carbonate filler of the mixer must be made if contamination is expected. Weigh all materials accurately. Maximum permissible weight departure is 3% of the total batch size. Mix in a Broughton or Day Mauta mixer until completely blended.

After blending is complete, pass the batch through a Mikropulverizer using a coarse (3/32" slot width) screen. It is then ready for packing.

END

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CP006 2186

Original Date of Issue 10-12-72 SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE (AP-275-C)	No. 61-2-11-3-U Date 4-20-73 Page 1 Cancels Page 1 Dated 1-24-73

This bulletin expires 11-1-73.

DESCRIPTION

C Plants to manufacture U.S.G. Joint Compound All Purpose formula AP-275-C for field trials and subsequent shipments per direction of Division Product Managers, SCPD and CCPD.

C MANUFACTURING PLANTS

C Dallas and Chamblee

PRODUCT LINE

Joint Compound

IDENTIFICATION AND PACKAGING

Same as per bulletin 61-2-11-3-1 except place the letter C after the code for identification.

FINISHED PRODUCT SPECIFICATIONS

As A Joint Compound	Natural White Only
Consistency	52 to 55 cc per 100 grams powder
Viscosity	500 ± 25 BB at 75°F, pin paddle
pH	8.7 - 9.1
Bond	5 minimum
Check Cracking	None to slight, when 1/8" fill coat forced dried with fan in hot room.
Drying Shrinkage	Low (below 26%) @ 500 ± 25 BB
As A Texture	
Consistency	125 to 145 cc water per 150 grams powder
Viscosity	80 - 120 BB, 5/16" flag, 15 minutes after mixing
Stipple Test	Shall produce medium height stipple, with minimum foam and good dry hardness.

UP006 2272

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Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE (AP-275-C)	No. 61-2-11-3-U Date 4-20-73 Page 2 Cancels Page 2 Dated 1-24-73

FORMULA

C	GP 702 (Note 1)	2.5%
C	Gelvatol 20-60 (Note 2)	0.83
	GM 65	0.5
	Ziram	0.1
	TSPP	0.15
C	TiO_2-R901 (Note 3)	0.5
	TRF02 Asbestos	4.5 (As Required)
	P80F Mica	5.0
C	Microfil #4 (Note 4)	To make 100%
	Sorbitol	0.3

A NOTE 1 Chamblee to use Vinac RP-251.
A NOTE 2 Chamblee to use Gelvatol 2000.
A NOTE 3 Chamblee to omit TiO_2-R901.
A NOTE 4 Chamblee to use Georgia Marble #9NCS instead of Microfil #4.

RAW MATERIALS

Same as per Bulletin 61-2-11-5-1 except:

TSPP	PMS 6-177-4
TiO_2-R901	PMS 6-130-8
Microfil #4	PMS 6-24-10

MANUFACTURING PROCEDURE

Same as per Bulletin 61-2-11-5-1.

END

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NDOC 2273

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND - ALL PURPOSE (AP-372)	No. 61-2-11-3-4 Date 3-28-73 Page 2 Cancels Page 2 Dated 3-14-73

FORMULA AP-372

MATERIAL

	No.		Chamblee	South Gate
	65765	Vinac RP251	1.66%	2.0%
	61747	JM7RF02 Asbestos	about 4.5	about 4.5
C	61740	WMC Mica P-80F (Note 4)	2/3 formula V	1/2 formula V
A		Mica S	-	5.3
	66179	Nopco PD-1	0.3	---
	65762	Gelvatol 6000BP	0.83	1.0
	67061	Crys. Sorbitol (Powder)	0.5	0.5
	67946	Glyoxal, 80% Crys.(-50mesh)	0.5	0.5
	66484	Natrosol 250 KX	0.5	0.5
	Note 1	Preservative (Note 1)	0.1	0.1
	61561 or 61581	Hydrated Lime	See Note 2	See Note 2
		Carbonate Filler (Note 3)	To make 100%	To make 100%

Note 1: Either material permissible No. 66683 (Ziram) or No. 66688 (Vancide MZ96).
Note 2: Hydrated Lime to be added, if required, to obtain a finished product pH of 8.6 to 9.1.
Note 3: Chamblee to use No. 61453 (#9NCS) and South Gate to use No. 61455 (MW325).
A Note 4: South Gate to Use Mica JC.

RAW MATERIALS

65765	Vinac RP251	PMS 6-104-18
61747	JM7RF02 Asbestos	PMS 6-14-5
61740	WMC Mica P-80F	58-61-1
66179	Nopco PD-1	PMS 6-40-21
65762	Gelvatol 6000BP	PMS 6-3-6
67061	Crys. Sorbitol (Powder)	Chas. Pfizer or Atlas Chemical
67946	Glyoxal, 80% Crys.(-50 mesh)	Centerchem, Inc., N.Y.
66484	Natrosol 250KX	6-151-1
66683	Ziram	PMS 6-100-11
66688	Vancide MZ96	PMS 6-100-11
61561 or 61581	Hydrated Lime	PMS 6-104-18
61453	#9NCS Carbonate	PMS 6-24-9
61455	MW325 Carbonate	PMS 6-24-1
A	Mica JC	PMS 6-143-1
A	Mica S	PMS 6-143-5

MANUFACTURING PROCEDURE

Contamination of this product with any of those containing casein and/or ammonium petaborate must be avoided. A thorough brush down and a charge of carbonate filler of the mixer must be made if contamination is expected. Weigh all materials accurately. Maximum permissible weight departure is 3% of the total batch size. Mix in a Broughton or Day Nauta mixer until completely blended.

After blending is complete, pass the batch through a Mikropulverizer using a coarse (3/32" slot width) screen. It is then ready for packing.

END

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USG 218R 4000

Cancels Temporary Bulletin 61-2-11-3-H Dated 9-12-72.

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND - ALL PURPOSE (AP - 372)	No. 61-2-11-3-4 Date 3-14-73 Page 1 Cancels NEW Dated

DESCRIPTION

Plants to manufacture USG Joint Compound All-Purpose formula AP372 for shipments per direction of Division Product Managers.

MANUFACTURING PLANTS

Chamblee, and South Gate.

IDENTIFICATION AND PACKAGING

Package in 1 mil polyethylene-lined USG All Purpose Joint Compound bag per Bulletin 7-16-11-3.

5 lb. - Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie), per PMS 8-10-10 in master carton per PMS 8-10-23.

60 Ft. - System with Knives - Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie), per PMS 8-13-2 in master carton per PMS 8-10-28.

60 Ft. - System without Knives - Pack 10 cartons (Use a 2 mil plain polyethylene liner in each carton. The liner must be tightly closed with a rubber band or wire tie), per PMS 8-13-1 in master carton per PMS 8-10-28.

250' System - Bag per Bulletin 7-16-36.

Include J-2 Directional folder in each of the 5#, 60' with and w/o knives and 250' System packages.

FINISHED PRODUCT SPECIFICATIONS

Color	- Natural White unless ordered pigmented.
Consistency	- 55 to 59 cc (57 cc normal).
Viscosity	- 530 ± 30 BB units at 75°F with pin paddle.
pH	- 8.6 to 9.1 (8.8 normal).
Bond	- 4 minimum.

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USG006 2187

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND - ALL PURPOSE (AP-372)	No. 61-2-11-3-4 Date 3-14-73 Page 2 Cancels NEW Dated

FORMULA AP-372

MATERIAL No.		Chamblee	South Gate
65765	Vinac RP251	1.66%	2.0%
61747	JMTRF02 Asbestos	about 4.5	about 4.5
61740	WMC Mica P-80F	2/3 formula V	2/3 formula V
66179	Nopco PD-1	0.3	—
65762	Gelvatol 6000BP	0.83	1.0
67061	Crys. Sorbitol (Powder)	0.5	0.5
67946	Glyoxal, 80% Crys.(-50mesh)	0.5	0.5
66484	Natrosol 250 KX	0.5	0.5
Note 1	Preservative (Note 1)	0.1	0.1
61561 or 61581	Hydrated Lime	See Note 2	See Note 2
	Carbonate Filler (Note 3)	To make 100%	To make 100%

Note 1: Either material permissible No. 66683 (Ziram) or No. 66688 (Vancide MZ96).

Note 2: Hydrated Lime to be added, if required, to obtain a finished product pH of 8.6 to 9.1.

Note 3: Chamblee to use No. 61453 (#9NCS) and South Gate to use No. 61455 (MW325).

RAW MATERIALS

65765	Vinac RP251	PMS 6-104-18
61747	JMTRF02 Asbestos	PMS 6-14-5
61740	WMC Mica P-80F	58-61-1
66179	Nopco PD-1	PMS 6-40-21
65762	Gelvatol 6000BP	PMS 6-3-6
67061	Crys. Sorbitol (Powder)	Chas. Pfizer or Atlas Chemical
67946	Glyoxal, 80% Crys.(-50 mesh)	Centerchem, Inc., N.Y.
66484	Natrosol 250KX	6-151-1
66683	Ziram	PMS 6-100-11
66688	Vancide MZ96	PMS 6-100-11
61561 or 61581	Hydrated Lime	PMS 6-104-18
61453	#9NCS Carbonate	PMS 6-24-9
61455	MW325 Carbonate	PMS 6-24-1

MANUFACTURING PROCEDURE

Contamination of this product with any of those containing casein and/or ammonium petaborate must be avoided. A thorough brush down and a charge of carbonate filler of the mixer must be made if contamination is expected. Weigh all materials accurately. Maximum permissible weight departure is 3% of the total batch size. Mix in a Broughton or Day Nauta mixer until completely blended.

After blending is complete, pass the batch through a Mikropulverizer using a coarse (3/32" slot width) screen. It is then ready for packing.

END

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USG 7190

SPECIAL BULLETIN

Operating Division PRODUCT PROCEDURE Approved:	**CONFIDENTIAL** **DO NOT REPRODUCE OR COPY** USG JOINT COMPOUND ALL PURPOSE (AP-361A) - NEW BRIGHTON	No. 61-2-11-3-K Date 3-12-73 Page 3 Cancels Page 3 Dated 5-7-69

FORMULA — **AP-361A**

BN-13	1.3%
B-329	2.0
GP-702	0.7
Gum Arabic No. 2 Tech. Grade	0.13
Santicizer #9	0.07
GM-65	0.4
Zinc Oxide	0.1
Ziram 95% Technical	0.15
JM/FB02 Asbestos	4.5 (as required)
Mica P-85	-- (per formula V)
Carbonate Filler (1)	-- (to make 100%)
Ferrite Yellow	-- (approx. 0.1 as required)

(1) New Brighton to use A Dolomite or #325 Mineral Filler.

RAW MATERIALS

A. BN-13*	Per PMS 6-124-9
B. B-329*	Per PMS 6-124-10
C. GP-702	Per PMS 6-104-18-1
D. Gum Arabic #2 Tech.	PMS 6-62-2
C E. Santicizer #9	PMS 6-98-2
F. GM-65*	Dow Chemical Co.
G. Carbonate Filler	Per PMS 6-24-17
H. Ziram 95% Technical Grade	Per PMS 6-100-11

*Raw Material Testing Procedure per PMS 12-45.

MANUFACTURING PROCEDURE

Per Bulletin 61-2-26 except a thorough brushing down followed by a clean-out charge of carbonate filler must be run before this product is made. (No clean-out is necessary afterwards as this product will not contaminate regular casein compounds.)

End

NP006 9008

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND - ALL PURPOSE (AP-372)	No. 61-2-11-3-N Date 2-13-73 Page 2 Cancels Page 2 Dated 12-19-72

FORMULA	Chamblee	South Gate
Vinac RP251	1.66%	2.0%
JM7RF02	about 4.5	about 4.5
Mica JC	2/3 formula V	1/2 formula V
Mica S	-	5.3
Nopco PD-1	0.3	0.3
Carbonate Filler	to make 100%	to make 100%
Gelvatol 6000	0.83	1.0
Sorbitol (Powder)	0.5	0.5
Glyoxal (80% crystalline)	0.5	0.5
Natrosol 250 KX	0.5	0.5
Ziram	0.1	0.1
Hydrated Lime (if required)	0.1	0.1

RAW MATERIALS

Gelvatol 6000	PMS 6-3-6
Crystalline Sorbitol (Powder)	Atlas Chemical, Chas. Pfizer
Glyoxal (80% crystalline 100% - 50 mesh)	Centerchem, Inc., N.Y., N.Y.
Natrosol 250 KX	Hercules, Inc.
Nopco PD-1	PMS 6-40-21
Vinac RP-251	PMS 6-104-18
Hydrated Lime	Bulletin 59-3-4
JM7RF02	6-14-10
Mica JC	6-143-1
Mica S	6-143-5
Carbonate Filler	
Chamblee, #9NCS	6-24-9
South Gate, MW325	6-24-1
Ziram	6-100-11

MANUFACTURING PROCEDURE

Prior to making this product, a thorough brushing down of the Broughton mixer must be made followed by a clean-out charge of carbonate filler. Contamination with Perf-A-Tape Joint Compounds, especially those containing ammonium pentaborate is to be avoided.

END

DP006 2229

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Operating Division	CONFIDENTIAL	No. 61-2-24-1 Date 12-12-73 Page 4 Cancels Page 4 Dated 11-27-72
PRODUCT PROCEDURE	USG READY MIXED JOINT COMPOUND - ALL PURPOSE - CHAMBLEE	

MANUFACTURING PROCEDURE

A. Mixing Procedure on Hockmeyer Mixer - Approx. 140 gal. batch.

Approximately 50 gallons of water are put into the Hockmeyer mixer. (The quantity of water used initially should be the smallest amount which can be used without overloading the motor when the dry materials are added). The Troysan 174 and Cosan 158A are then added and the mixer is run for a few turns to disperse these materials. The dry materials and plasticized emulsion are then added, and the batch is mixed until all lumps are broken down and all materials thoroughly mixed. The mixer is then turned off and the viscosity of a sample is determined on a Brabender viscosimeter. Additional water, as required, is then added and the batch mixed until a smooth, homogeneous mixture is obtained. The mixer is then stopped and another sample is checked on the viscosimeter. If the viscosity is still too high, this procedure is repeated until the proper viscosity is reached.

B. Filling: All 5 gallon containers are to be filled by weight. Net weight to be equivalent to 5 gallon volume as determined from weight per gallon test.

END

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GP009 1151

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL-PURPOSE (AP-275D) - DALLAS	No. 61-2-11-3 Date 12-19-74 Page 2 Cancels Page 2 Dated 1-4-74

FORMULA

*R/M #		%
65765	Vinac RP-251 (Note 1)	1.0
65669	Staramic 620	4.0
66458	Methocel 228	0.5
66688	Vancide MZ-96	0.15
61747	P-80F Mica	5.0
61741	7RF02 Asbestos	(as required)(about 5.5%)
66179	Nopco PD-1	0.3
67061	Sorbitol	0.3
61466	Microfil #4	to make 100%

* USG Unified Raw Material Code Number.

Note 1: GP 702 (65760) may be used as an alternate.

RAW MATERIALS

Same as bulletin 61-2-11-5-1 except:

Staramic 620	A.E. Stanley Mfg. Co.
Nopco PD-1	PMS 6-40-21
GP 702	PMS 6-104-18-1

MANUFACTURING PROCEDURE

Same as Bulletin 61-2-11-5-1.

SHIPMENT

Into all CCPD (Denver District #91, Kansas City Districts 70 and 34, St. Louis #6), Dallas and Tarrant counties, Albuquerque (city).

END.

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OP006 2006

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE AP-275B	No. 61-2-11-3-1 Date 11-26-74 Page 3 Cancels Page 3 Dated 4-26-74

FORMULA (AP-275-B)

*R/M #		AP-275-B
65671	CEA 216 C	1.5%
65672	Staramic 329	4.0
63660 or 63746	Gum Arabic (powd.) or Burtonite W-88-C	.5
66458	Methocel 228	.6
66688 or 66683	Preservative	0.15
61747	Mica JC (Note 4)	Per Formula V
61471	TRF02 Asbestos (Note 2)	As Req'd. for consistency control - 2.5% in lab batches.
61758 or 61743	TRF9 Asbestos (Note 2)	3.0
61463	Quincy #3 (Note 3)	To make 100%
66179	Nopco PD-1 (Note 1)	0.3%

Note 1: Gypsum to omit Nopco PD-1 in 5 lb., 60 ft. systems and in 250 ft. system.
Note 2: Midway to use Carey TRF66 Asbestos (61682) only.
Note 3: Gypsum to use Terra Alba (61582) in 5 lb., 60 ft. systems, 250 ft. system and pigmented compound.
Note 4: Midway to use P80F Mica (61747).

*USG Unified Raw Material Code Number.

RAW MATERIALS

Nopco PD-1	- Per PMS 6-40-21.
CEA 216 C	- A special starch binder from Hercules Inc.
Staramic 329 (Note 1)	- Per Bulletin 6-124-10
Burtonite W-88-C	- Burtonite Co.
Gum Arabic	- Per PMS 6-62-2
Methocel 228	- Per PMS 6-151-16
Mica P-80F	- Per PMS 6-143-1
Mica JC	- Per Bulletin 6-143-1
Asbestos	- Per Bulletin 6-14-5, and 6-14-10
Preservative	- Per Bulletin 6-100-11
Quincy #3	- Per PMS 6-24-22
Terra Alba	- Per T52-505-2C

Note 1: Raw Material testing Procedures per PMS 12-45.

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DP007 0141

Contains portion of material formerly on page 3 dated 4-26-74.

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE	No. 61-2-11-3-1 Date 11-26-74 Page 4 Cancels NEW Dated

MANUFACTURING PROCEDURE

This compound is borate sensitive, hence should be run after AP-100 or other non-borate containing compounds, and then with the equipment well brushed down. Weighing, mixing, and Mikropulverizing are the same as for otter joint compounds.

QUALITY CONTROL

Per 61-2-26 and 61-2-22.

END.

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DP007 0138

Operating Division	CONFIDENTIAL	No. 61-2-11-3-4
		Date 7-22-74
		Page 2
PRODUCT PROCEDURE	USG JOINT COMPOUND - ALL PURPOSE (AP-372)	Cancels Page 2
		Dated 12-19-73

FORMULA

R/M #		South Gate
65765	Vinac RP251 or	2.0%
65777	RS 6402	
61741	JM7RF02 Asbestos or	about 4.5
61682	7RF-66	
61747	WMC Mica P-80F	1/2 formula V
61759	Mica S	5.3
65762	Gelvatol 6000	1.0
67061	Crys. Sorbitol (Powder)	0.5
67946	Glyoxal, 80% Crys.(-50 mesh)	0.25
66484	Natrosol 250 KX	0.5
Note 1	Preservative (Note 1)	0.1
61561 or 61581	Hydrated Lime	See Note 2
61457	Land Plaster - Bulk	To make 100%

Note 1: Either material permissible No. 66683 (Ziram) or No. 66688 (Vancide MZ96).
Note 2: Hydrated Lime to be added, if required, to obtain a finished product pH of 8.6 to 9.1.

RAW MATERIALS

	Per
Vinac RP251	PMS 6-104-18
RS 6402	Monsanto Chem. Co.
JM7RF02 Asbestos	PMS 6-14-5
WMC Mica P-80F	58-61-1
Gelvatol 6000	PMS 6-3-6
Crys. Sorbitol (Powder)	Chas. Pfizer or Atlas Chemical
Glyoxal, 80% Crys.(-50 mesh)	6-66-1
Natrosol 250 KX	6-151-1
Ziram	PMS 6-100-11
Vancide MZ 96	PMS 6-100-11
Hydrated Lime	PMS 6-104-18
Land Plaster - Bulk	Plaster City
Mica S	PMS 6-143-5
7RF-66 Asbestos	PMS 6-14-10

MANUFACTURING PROCEDURE

Contamination of this product with any of those containing casein and/or ammonium petaborate muse be avoided. A thorough brush down and a charge of carbonate filler of the mixer must be made if contamination is expected. Weigh all materials accurately. Maximum permissible weight departure is 3% of the total batch size. Mix in a Broughton or Day Nauta mixer until completely blended.

After blending is complete, pass the batch through a Mikropulverizer using a coarse (3/32" slot width) screen. It is then ready for packing.

END.

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UP006 2374

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND - ALL PURPOSE (AP-372)	No. 61-2-11-3-4 Date 7-22-74 Page 2 Cancels Page 2 Dated 12-19-73

FORMULA

R/M #		South Gate
65765	Vinac RP251 or	2.0%
65777	RS 6402	
61741	J1TRF02 Asbestos or	about 4.5
61682	TRF-66	
61747	WMC Mica P-80F	1/2 formula V
61759	Mica S	5.3
65762	Gelvatol 6000	1.0
67061	Crys. Sorbitol (Powder)	0.5
67946	Glyoxal, 80% Crys.(-50 mesh)	0.25
66484	Natrosol 250 KX	0.5
Note 1	Preservative (Note 1)	0.1
61561 or 61581	Hydrated Lime	See Note 2
61457	Land Plaster - Bulk	To make 100%

Note 1: Either material permissible No. 66683 (Ziram) or No. 66688 (Vancide MZ96).
Note 2: Hydrated Lime to be added, if required, to obtain a finished product pH of 8.6 to 9.1.

RAW MATERIALS

	Per
Vinac RP251	PMS 6-104-18
RS 6402	Monsanto Chem. Co.
J1TRF02 Asbestos	PMS 6-14-5
WMC Mica P-80F	58-61-1
Gelvatol 6000	PMS 6-3-6
Crys. Sorbitol (Powder)	Chas. Pfizer or Atlas Chemical
Glyoxal, 80% Crys.(-50 mesh)	6-66-1
Natrosol 250 KX	6-151-1
Ziram	PMS 6-100-11
Vancide MZ 96	PMS 6-100-11
Hydrated Lime	PMS 6-104-18
Land Plaster - Bulk	Plaster City
Mica S	PMS 6-143-5
TRF-66 Asbestos	PMS 6-14-10

MANUFACTURING PROCEDURE

Contamination of this product with any of those containing casein and/or ammonium petaborate must be avoided. A thorough brush down and a charge of carbonate filler of the mixer must be made if contamination is expected. Weigh all materials accurately. Maximum permissible weight departure is 3% of the total batch size. Mix in a Broughton or Day Nauta mixer until completely blended.

After blending is complete, pass the batch through a Mikropulverizer using a coarse (3/32" slot width) screen. It is then ready for packing.

END.

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USP006 2170

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE AP-361A	No. 61-2-11-3-3 Date 6-3-74 Page 2 Cancels Page 2 Dated 9-19-72

FORMULA	%
Tapex	1.3%
Staramic 329	2.0
Vinac RP251	0.7
Gum Arabic No. 2 Tech.	0.13
Methocel 228	0.4
St. Joe No. 17 Zinc Oxide	0.1
Preservative (Note 1)	0.15
JM7RF02 Asbestos	As req'd to meet cons.
WMC P 80F Mica	13.3
Pfizer FP Limestone	To make 100%
Crystalline Sorbitol Powder	0.3

Note 1: New Brighton may use Vancide 51Z or Vancide MZ96

RAW MATERIALS

R/M #		PER
65674	Tapex	PMS 6-124-9
65672	Staramic 329	PMS 6-124-10
65765	Vinac RP251	PMS 6-104-18
63660	Gum Arabic No. 2 Tech.	PMS 6-62-2
66458	Methocel 228	PMS 6-151-16
61190	St. Joe No. 17 Zinc Oxide	PMS 6-94-99
66677	Vancide 51Z	PMS 6-100-1
66688	Vancide MZ96	PMS 6-100-11
61741	JM7RF02 Asbestos	PMS 6-14-10
61747	WMC P 80F Mica	PMS 6-143-1
61567	Pfizer FP Limestone	PMS 6-24-23
67061	Crystalline Sorbitol Powder	Atlas Chemical Div. ICI America, Inc.

MANUFACTURING PROCEDURE

Per bulletin 61-2-22.

END.

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OP006 2356

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE AP-275B	No. 61-2-11-3-1 Date 4-26-74 Page 3 Cancels Page 3 Dated 6-26-73

FORMULA (AP-275-B)

	AP-275-B
CEA 216 C	1.5%
Staramic 329	4.0
Gum Arabic (powd.)	.5
GM-65	.6
Preservative	0.15
Mica JC (Note 4)	Per Formula V
TRF02 Asbestos (Note 2)	As Req'd for consistency control - 2.5% in lab batches.
TRF9 Asbestos (Note 2)	3.0
Quincy #3 (Note 3)	To make 100%
Nopco PD-1 (Note 1)	0.3%

Note 1: Gypsum to omit Nopco PD-1 in 5 lb., 60 ft. systems and in 250 ft. system.
Note 2: Midway to use Carey TRF66 only.
Note 3: Gypsum to use Terra Alba in 5 lb., 60 ft. systems, 250 ft. system and pigmented compound.
Note 4: Midway to use P80F Mica.

RAW MATERIALS

Nopco PD-1	- Per PMS 6-40-21.
CEA 216 C	- A special starch binder from Hercules Inc.
Staramic 329*	- Per Bulletin 6-124-10
Gum Arabic	- #2 sorts ground to pass 60 mesh practically 100%.
	- Per Bulletin 6-151-16
Mica JC	- Per Bulletin 6-143-1.
Asbestos	- Per Bulletin 6-14-5, and 6-14-10
Preservative	- Per Bulletin 6-100-11
Quincy #3	- Per PMS 6-24-22
Terra Alba	- Per T52-505-2C

* Raw material testing Procedures per PMS 12-45.

MANUFACTURING PROCEDURE

This compound is borate sensitive, hence should be run after AP-100 or other non-borate containing compounds, and then with the equipment well brushed down. Weighing, mixing, and Mikropulverizing are the same as for otter joint compounds.

QUALITY CONTROL

Per 61-2-26 and 61-2-22.

END

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DP007 0145

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE (AP-275-C)	No. 61-2-11-3-5 Date 3-6-74 Page 2 Cancels Page 2 Dated 1-1-74

FORMULA

	Raw Material No.	Raw Material	% or PMS
	65760	GP 702 (Note 1)	2.5%
	65762	Gelvatol 6000	0.83%
	66458	Methocel 228	0.5
	66683	Ziram	0.1
A	66358	TSPP (Note 3)	0.15
	61741	7RF02 Asbestos	4.5 (As Required)
	61747	P80F Mica	5.0
	61466	Microfil #4 (Note 2)	To make 100%
	67061	Sorbitol	0.3

NOTE 1: Chamblee to use Vinac RP-251.
NOTE 2: Chamblee to use Georgia Marble #9MCS instead of Microfil #4.
A NOTE 3: Chamblee only.

RAW MATERIALS

Same as per Bulletin 61-2-11-5-1 except:

Raw Material No.	Raw Material	% or PMS
61466	Microfil #4	PMS 6-24-10
65760	GP-702	PMS 6-104-18-1
65762	Gelvatol 6000	PMS 6-3-6
66683	Ziram	PMS 6-100-11
61741	7RF02 Asbestos	PMS 6-14-10
61747	P-80F Mica	PMS 6-143-1
67061	Sorbitol	PMS
66458	Methocel 228	PMS 6-151-16
A 66358	TSPP	PMS 6-177-4

MANUFACTURING PROCEDURE

Same as per Bulletin 61-2-11-5-1.

END

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Operating Division PRODUCT PROCEDURE	CONFIDENTIAL USG JOINT COMPOUND ALL PURPOSE (AP-275-C)	No. 61-2-11-3-5 Date 1-4-74 Page 2 Cancels Page 2 Dated 12-18-73

FORMULA

	Raw Material No.	Raw Material	% or PMS
	65760	GP 702 (Note 1)	2.5%
	65762	Gelvatol 6000	0.83%
	66458	Methocel 228	0.5
	66683	Ziram	0.1
D	61741	7RF02 Asbestos	4.5
D			(As Required)
	61747	P80F Mica	5.0
C	61466	Microfil #4 (Note 2)	To make 100%
	67061	Sorbitol	0.3

NOTE 1 Chamblee to use Vinac RP-251.
D NOTE 2 Chamblee to use Georgia Marble #9NCS instead of Microfil #4.
C

RAW MATERIALS

Same as per Bulletin 61-2-11-5-1 except:

	Raw Material No.	Raw Material	% or PMS
D	61466	Microfil #4	PMS 6-24-10
D	65760	GP-702	PMS 6-104-18-1
	65762	Gelvatol 6000	PMS 6-3-6
	66683	Ziram	PMS 6-100-11
	61741	7RF02 Asbestos	PMS 6-14-10
	61747	P-80F Mica	PMS 6-143-1
	67061	Sorbitol	PMS
	66458	Methocel 228	PMS 6-151-16

MANUFACTURING PROCEDURE

Same as per Bulletin 61-2-11-5-1.

END

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D Indicates Deletion
C Indicates Change

UP006 2403

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL-PURPOSE (AP-275D) - DALLAS	No. 61-2-11-3 Date 1-4-74 Page 2 Cancels Page 2 Dated 8-22-73

	Formula	AP-275D
	Vinac RP-251	1.0%
	Staramic 620	4.0
	GM-65	0.5
	Vancide MZ-96	0.15
	P-80P Mica	5.0
D	TRF02 Asbestos	(as required)(about 5.5%)
	Nopco PD-1	0.3
	Sorbitol	0.3
	Microfil #4	to make 100%

Raw Materials

Same as bulletin 61-2-11-5-1 except:

D	Staramic 620	A.E. Stanley Mfg. Co.
	Nopco PD-1	PMS 6-40-21
	Vancide MZ-96	PMS 6-100-11

MANUFACTURING PROCEDURE

Same as Bulletin 61-2-11-5-1

SHIPMENT

Into all CCPD (Denver District #91, Kansas City Districts 70 and 34, St. Louis #6), Dallas and Tarrant counties, Albuquerque (city).

END

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USP006 2003

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND ALL PURPOSE (AP-275-C)	No. 61-2-11-3-5 Date 12-19-74 Page 2 Cancels Page 2 Dated 3-6-74

FORMULA

*R/M #		%
65760	GP 702 (Note 1)	2.5%
65762	Gelvatol 6000	0.83%
66458	Methocel 228	0.5
66683	Ziram	0.1
66358	TSPP (Note 3)	0.15
61741	TRF02 Asbestos	4.5 (As Required)
61747	P80F Mica	5.0
61466	Microfil #4 (Note 2)	To make 100%
67061	Sorbitol	0.3

NOTE 1: Vinac RP-251 (65765) may be used as an alternate.
NOTE 2: Chamblee to use Georgia Marble #9NCS (61453).
NOTE 3: Chamblee only.

* USG Unified Raw Material Code Number.

RAW MATERIALS

	PMS
Vinac RP-251	6-104-18
Microfil #4	6-24-10
GP-702	6-104-18-1
Gelvatol 6000	6-3-6
Ziram	6-100-11
TRF02 Asbestos	6-14-10
P-80F Mica	6-143-1
Sorbitol	PMS
Methocel 228	6-151-16
TSPP	6-177-4
#9NCS	6-24-9

MANUFACTURING PROCEDURE

Same as per Bulletin 61-2-11-5-1.

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USG 2199

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG READY MIXED JOINT COMPOUND ALL PURPOSE (FOR TEXTURE ONLY)	No. 61-2-24-2-1-D Date 7-26-74 Page 2 Cancels NEW Dated

FORMULA - JE-598-D (Modified)

	% Non Volatile	lbs. for 250 gal. batch (2000 lbs. N.V.)
Pyrax A or B	10%	200 approximately
JETRF02 Asbestos	As req'd for correct BB and water content	70 approximately
Microfil #4	To make 100% N.V.	To make up 1900 lbs. N.V.
PM-4386 emulsion	5.0%	167 lbs.
Methocel 65HG	0.8%	16 lbs.
Cosan 158A	-	1 lb.
Troysan 174	-	1 lb.
Drew Defoamer L-475	-	5 lbs.
NOPCO NXZ Defoamer	-	4 lbs.
Water	———	approx. 130 gal.

RAW MATERIALS

	Per P.S
ASBESTOS	6-14-10
Microfil #4	6-24-10
Methocel	6-25-6
PM-4386	6-104-55
Troysan - 174	6-100-14
Cosan 158A	Cosan Chemical Company
Pyrax A or B	6-103-1 or 6-103-2
Drew Defoamer L-475	6-40-13
NOPCO NXZ Defoamer	6-40-15

END.

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JP009 1691

Operating Division PRODUCT PROCEDURE	**CONFIDENTIAL** USG JOINT COMPOUND - ALL PURPOSE (AP-372)	No. 61-2-11-3-4 Date 3-26-75 Page 2 Cancels Page 2 Dated 7-22-74

FORMULA

	R/M #		South Gate
C	65765	Vinac RP251 or	2.2%
	65777	RS 6402	
C	61741	JMTRF02 Asbestos or	about 2.8
	61682	TRF-66	
C	61747	WMC Mica P-80F	8.3
C	61759	Mica S	5.5
	65762	Gelvatol 6000	1.0
	67061	Crys. Sorbitol (Powder)	0.5
	67946	Glyoxal, 80% Crys.(-50 mesh)	0.25
	66484	Natrosol 250 KX	0.5
	Note 1	Preservative (Note 1)	0.1
	61561 or	Hydrated Lime	See Note 2
	61581		
	61457	Land Plaster - Bulk	To make 100%

Note 1: Either material permissible No. 66683 (Ziram) or No. 66688 (Vancide MZ96).
Note 2: Hydrated Lime to be added, if required, to obtain a finished product pH of 8.6 to 9.1.

RAW MATERIALS

	Per
Vinac RP251	PMS 6-104-18
RS 6402	Monsanto Chem. Co.
JMTRF02 Asbestos	PMS 6-14-5
WMC Mica P-80F	58-61-1
Gelvatol 6000	PMS 6-3-6
Crys. Sorbitol (Powder)	Chas. Pfizer or Atlas Chemical
Glyoxal, 80% Crys.(-50 mesh)	6-66-1
Natrosol 250 KX	6-151-1
Ziram	PMS 6-100-11
Vancide MZ 96	PMS 6-100-11
Hydrated Lime	PMS 6-104-18
Land Plaster - Bulk	Plaster City
Mica S	PMS 6-143-5
TRF-66 Asbestos	PMS 6-14-10

MANUFACTURING PROCEDURE

Contamination of this product with any of those containing casein and/or ammonium potaborate must be avoided. A thorough brush down and a charge of carbonate filler of the mixer must be made if contamination is expected. Weigh all materials accurately. Maximum permissible weight departure is 3% of the total batch size. Mix in a Broughton or Day Mauta mixer until completely blended.

After blending is complete, pass the batch through a Mikropulverizer using a coarse (3/32" slot width) screen. It is then ready for packing.

END.

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C Indicates Change

NPDNA 2146

Operating Division * CONFIDENTIAL ** CONFIDENTIAL * No. 61-2-11-3-5
Date 11-11-75

PRODUCT PROCEDURE — USG JOINT COMPOUND ALL PURPOSE (AP-275-C) — Page 1
Cancels Page 1
Dated 7-10-75

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DESCRIPTION

Plants to manufacture U.S.G. Joint Compound All Purpose formula AP-275-C for field trials and subsequent shipments per direction of Division Product Manager,
C SCPD.

MANUFACTURING PLANTS

DELETE CHAMBLEE Cancel

C Chamblee

PRODUCT LINE

Joint Compound

IDENTIFICATION AND PACKAGING

Same as per bulletin 61-2-11-3-1 except place the letter C after the code for identification.

FINISHED PRODUCT IDENTIFICATION

Color	Natural White Only
As A Joint Compound	
Consistency	52 to 55 cc per 100 grams powder
Viscosity	500 ± 25 BB at 75°F, pin paddle
C pH	8.7 - 9.5
Bond	5 minimum
Check Cracking	None to slight, when 1/8" fill coat forced dried with fan in hot room.
Drying Shrinkage	Low (below 26%) @ 500 ± 25 BB
As A Texture	
Consistency	125 to 145 cc water per 150 grams powder
Viscosity	80 - 120 BB, 5/16" flag, 15 minutes after mixing
Stipple Test	Shall produce medium height stipple, with minimum foam and good dry hardness.

C Indicates Change

USP006 2193

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FORMULA

	*R/M #		%
	65760	GP 702 (Note 1)	2.5%
	65762	Gelvatol 6000	0.83%
	66458	Methocel 228	0.5
	66683	Ziram	0.1
C	66358	TSPP	0.15
	61741	7RF02 Asbestos	4.5
			(As Required)
	61747	P80F Mica	5.0
C	61453	#9NCS	To make 100%
	67061	Sorbitol	0.3

NOTE 1: Vinac RP-251 (65765) may be used as an alternate.

D

* USG Unified Raw Material Code Number.

RAW MATERIALS

		PMS
D	Vinac RP-251	6-104-18
	GP-702	6-104-18-1
	Gelvatol 6000	6-3-6
	Ziram	6-100-11
	7RF02 Asbestos	6-14-10
	P-80F Mica	6-143-1
	Sorbitol	PMS
	Methocel 228	6-151-16
	TSPP	6-177-4
	#9NCS	6-24-9

MANUFACTURING PROCEDURE

Same as per Bulletin 61-2-11-5-1.

END.

USP006 2195

Orginally issued 10-20-76. 1st Extension

Operating Division * CONFIDENTIAL ** CONFIDENTIAL * No. 61-2-24-K
Date 11-11-77
PRODUCT PROCEDURE USG READY MIXED ALL PURPOSE AND TAPING SOUTH GATE Page 1
C Cancels Page 1
Dated 7-28-77

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C This bulletin expires 11-1-78.

DESCRIPTION

A non-asbestos Ready Mixed All Purpose or Taping Compound formulated to meet a competitive situation in sales districts with low USG acceptance. Shipments as directed by WCPD Joint Compound Product Manager.

MANUFACTURING PLANT

South Gate

IDENTIFICATION AND PACKAGING

12 lb. Plastic Pails	Per PMS 8-15-16. Master carton per PMS 8-10-36.
50 lb. Cartons	Per PMS 8-10-29-1, 8-10-29
62 lb. Plastic Pails	Per PMS 8-15-15-4, 8-15-15-3

Circular plastic sheet to be layed on surface of compound packaged in 5 gallon plastic pails per PMS 8-5-11. The letter "J" to follow code.

FINISHED PRODUCT SPECIFICATIONS

1.	Color	- Natural (Taping) or pigmented to match manila SR paper.
2.	Viscosity	- 630 ± 30 BB units.
3.	Bond	- 5 minimum. Dried at 75 ± 3°F, 50 ± 5% R.H.
4.	Bond-To-Metal (DURABEAD)	- Shall not flake off.
5.	pH	- 8.3 to 8.9 (fresh).
6.	Application properties	- To equal standard and contain no grit.
7.	Edge cracking	- None.

JP009 0979

C Indicates Change

Operating Division	* CONFIDENTIAL ** CONFIDENTIAL *	No. 61-2-24-3-A Date 4-12-77
PRODUCT PROCEDURE	USG READY MIXED ALL-PURPOSE JOINT COMPOUND	Page 1 Cancels NEW Dated

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This bulletin expires 10-1-77.

Port Reading to manufacture trial batches of formula JE-1477A per bulletin 61-2-24-3 with the following changes:

FORMULA

UCAR 131 is to be replaced by each of two new emulsion binders, Air Products 2544-43 and UCAR 828. These new emulsions are to be evaluated at 3.4% solid binder level.

Freeze/thaw and adhesion performance to be reported to Research.

END.

OPC09 1660

Operating Bulletin: 61-2-24-2-1
Subject: USG All-Purpose Ready-Mixed Joint Compound (JE-1210B)

Description:

An emulsion based product containing Composition T as a dispersant, which according to laboratory tests results in lower drying shrinkage.

Manufacturing Plants: Midway

Identification and Packaging:

Normal code to be followed by the suffix T
Packaging per Bulletin 61-2-24-2-1

Finished Product Specifications:

Viscosity - 600 ± 30 Brabender units with pin paddle at 77°F.
Color - Natrual unless pigmented specified
Bond-to-Tape - 5 minimum at 77°F.-50% R.H.
Weight per Gal. - 12.8 to 13.0 lbs. per gal.

Raw Mat'l. No.	Formula	% N.V.	Lbs. per 250 Gal. Batch
61747	P-80F Mica	1/2 formula V	160
61763	Narvon CE-F-1 Sericite	30.0%	600
61682	7RF66 Asbestos	3.0	60
66481	Methocel 65HG	0.8	16
61463	Quincy #3	to make 94.5%	to make 1,890 lbs.
66167	Composition T	0.2	4
65272	PM-4386 (60%)	5.5	183
66659	Cosan 158A	---	1
66685	Troysan 174	---	1

Raw Materials:

Composition T - Merck 98900 - Merck Chemical Company
Other raw materials per Bulletin 61-2-24-2-1

TP009 1599

Operating Division	* CONFIDENTIAL ** CONFIDENTIAL *	No.	61-2-24-3-B
		Date	6-2-77
PRODUCT PROCEDURE	USG READY MIXED ALL-PURPOSE JOINT COMPOUND JE-1477A	Page	1
		Cancels	NEW
		Dated	

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This bulletin expires 12-1-77.

Port Reading to manufacture formula JE-1477-A per Bulletin 61-2-24-3 with the following exception:

FORMULA

Plant is to use 200 lbs. of Navron Sericite per each 700 gallon batch. UMC P80F mica and FP Limestone are to be reduced by 100 lbs. each per 700 gallon batch.

PACKAGING

Navron Sericite formula to be packaged in 1 gal. cans only.

END.

NP009 1677

Operating Division	* CONFIDENTIAL ** CONFIDENTIAL *	No. 61-2-24-3-C
		Date 7-1-77
PRODUCT PROCEDURE	USG READY MIXED ALL PURPOSE JOINT COMPOUND JE-1477A	Page 1
		Cancels NEW
		Dated

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This bulletin expires 1-1-78

Port Reading to manufacture Ready Mixed All Purpose Joint Compound Formula JE-1477A per bulletin 61-2-24-3 with the following exceptions:

FORMULA

336 lbs. of Airflex 527-BP emulsion to be substituted for the 374 lbs. of Ucar 131.

Plant is also to substitute a blend of Gel B and Minugel FG for Attagel 50. This substitution is to be 100 lbs. each of Gel B and Minugel, replacing 150 lbs. of Attagel 50. This change can be made to current JE-1477A formula using Ucar 131 or to the JE-1477A formula using the Air Products emulsion.

Trial shipments as directed by #991 R. C. Spahr.

END

NPCO® 1612

Originally Issued 6-2-77 — 1st Extension

Operating Division * CONFIDENTIAL ** CONFIDENTIAL *

PRODUCT PROCEDURE — USG READY MIXED ALL-PURPOSE JOINT COMPOUND JE-1477A

No. 61-2-24-3-B
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C This bulletin expires 12-1-78.

Port Reading to manufacture formula JE-1477-A per Bulletin 61-2-24-3 with the following exception:

FORMULA

Plant is to use 200 lbs. of Mavron Sericite per each 700 gallon batch. UMC P80F mica and FP Limestone are to be reduced by 100 lbs. each per 700 gallon batch.

PACKAGING

Mavron Sericite formula to be packaged in 1 gal. cans only.

END.

C Indicates Change