



Tutorial

GrafCompounder 4.0

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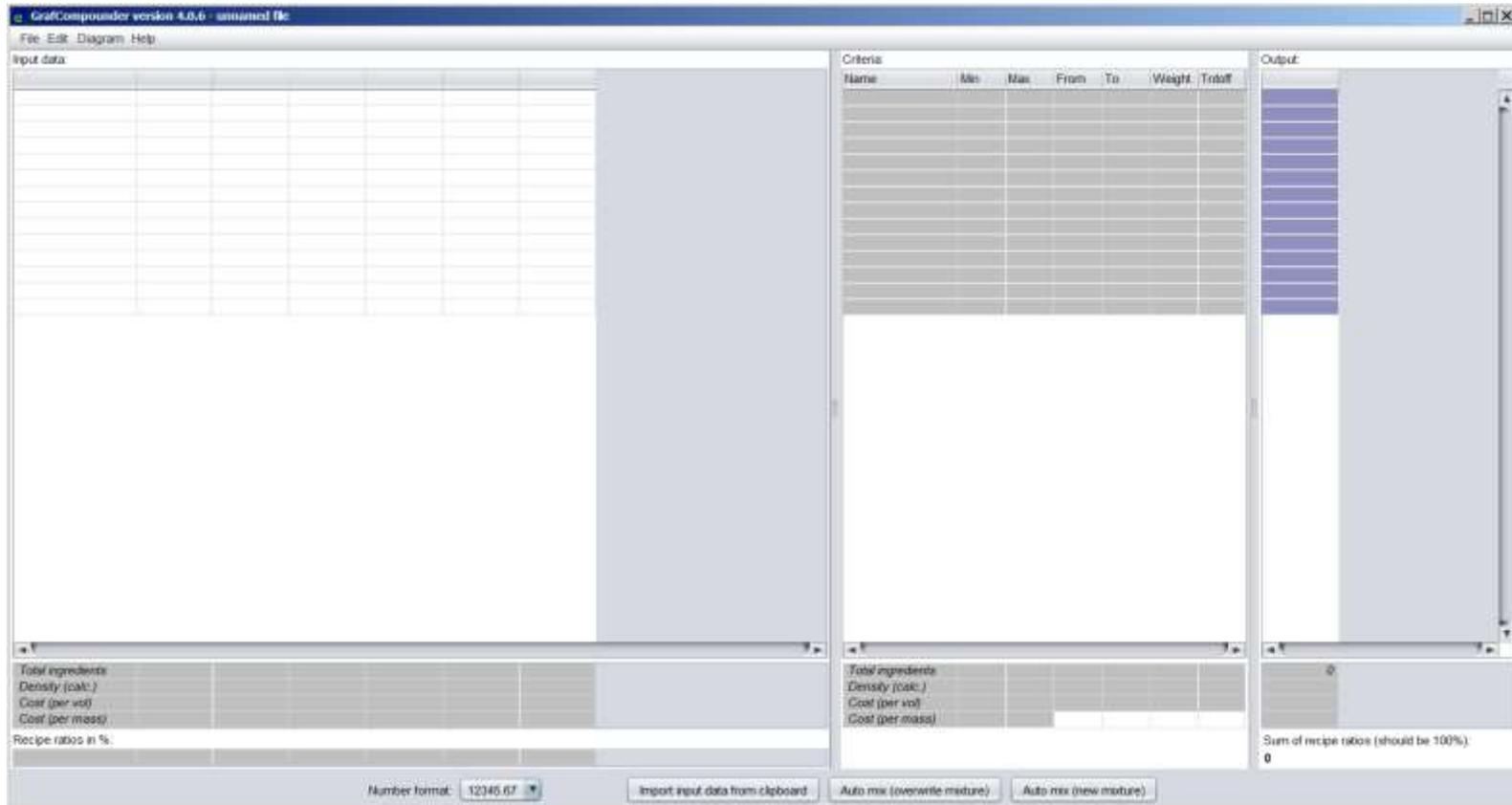
Content of this Presentation:

GrafCompounder

Step by Step

Conclusion





Screen shot after start

GRACompouder version 6.0.0 - Data Data (Standard)

File Edit Diagram Help

Input Data

Ingredients	Recipe	RM1211	RM1212	RM1213	RM1214	RM1215	RM1216	RM1217	RM1218	RM1219
HD (50% - 10)		100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
HD28		100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
CaCO3		20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Hydroxide 20		5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
ZnO		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Stearic Acid		0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
WFO		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
S		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TMTD-80		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRS-80		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Criteria

Name	Min	Max	From	To	Weight	Unit	Output
RM1211-100	100	100					
HD	10	10					
CaCO3	2	20					
Hydroxide 20	5	5					
ZnO	1	1					
Stearic Acid	0.5	0.5					
WFO	2	2					
S	1	1					
TMTD-80	0	0					
CRS-80	0	0					

GRACompouder version 6.0.0 - Data Data (Advanced)

File Edit Diagram Help

Input Data

Code	Cost	Density	Ingredients	RM1211	RM1212	RM1213	RM1214	RM1215	RM1216	RM1217	RM1218	RM1219
RM001	200.00	0.92	HD (50% - 10)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
RM007	115.00	1.00	HD28	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
RM010	24.00	2.71	CaCO3	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
RM002	510.00	0.90	Hydroxide 20	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
RM001	300.00	5.00	ZnO	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RM001	90.00	0.90	Stearic Acid	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
RM001	824.00	1.15	WFO	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
RM001	108.00	1.60	S	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RM001	300.00	1.11	TMTD-80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RM001	708.00	1.08	CRS-80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Properties

Code	Mooney ML(1+1) 120°C	Mooney S(1) 120°C	Density (g/cm3)	Hardness (ShA)	RM001	RM007	RM010	RM002	RM001	RM001	RM001	RM001
RM001	32.00	30.00	1.00	41.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
RM007	25.00	20.00	1.00	32.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
RM010	42.00	41.00	2.71	80.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
RM002	1.00	1.00	0.90	4.40	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
RM001	1.00	1.00	5.00	4.40	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RM001	0.50	0.50	0.90	4.40	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
RM001	2.00	2.00	1.15	17.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
RM001	1.00	1.00	1.60	11.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RM001	0.00	0.00	1.11	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RM001	0.00	0.00	1.08	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Summary

Total ingredients	100.00	100.00	200.00	101.00	201.00	101.00	201.00
Density (g/cm3)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Cost (per unit)	200.00	200.00	200.00	200.00	200.00	200.00	200.00
Cost (per mass)	2.00	2.00	2.00	2.00	2.00	2.00	2.00

Recipe ratios in %

GRACompouder version 6.0.0 - Data Data (Advanced)

File Edit Diagram Help

Input Data

Code	Cost	Density	Ingredients	RM1211	RM1212	RM1213	RM1214	RM1215	RM1216	RM1217	RM1218	RM1219
RM1211-100	100	100										
HD	10	10										
CaCO3	2	20										
Hydroxide 20	5	5										
ZnO	1	1										
Stearic Acid	0.5	0.5										
WFO	2	2										
S	1	1										
TMTD-80	0	0										
CRS-80	0	0										

Criteria

Name	Min	Max	From	To	Weight	Unit	Output
RM1211-100	100	100					
HD	10	10					
CaCO3	2	20					
Hydroxide 20	5	5					
ZnO	1	1					
Stearic Acid	0.5	0.5					
WFO	2	2					
S	1	1					
TMTD-80	0	0					
CRS-80	0	0					

Properties

Code	Mooney ML(1+1) 120°C	Mooney S(1) 120°C	Density (g/cm3)	Hardness (ShA)	RM001	RM007	RM010	RM002	RM001	RM001	RM001	RM001
RM001	32.00	30.00	1.00	41.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
RM007	25.00	20.00	1.00	32.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
RM010	42.00	41.00	2.71	80.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
RM002	1.00	1.00	0.90	4.40	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
RM001	1.00	1.00	5.00	4.40	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RM001	0.50	0.50	0.90	4.40	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
RM001	2.00	2.00	1.15	17.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
RM001	1.00	1.00	1.60	11.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RM001	0.00	0.00	1.11	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RM001	0.00	0.00	1.08	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Summary

Total ingredients	100.00	100.00	200.00	101.00	201.00	101.00	201.00
Density (g/cm3)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Cost (per unit)	200.00	200.00	200.00	200.00	200.00	200.00	200.00
Cost (per mass)	2.00	2.00	2.00	2.00	2.00	2.00	2.00

Recipe ratios in %

Standard File / Advanced

GrafCompounder version 4.0.6 - Demo data (Advanced)

File Edit Diagram Help

Input data

Demo Data		MALE011	MALE012	MALE013	MALE014	MALE015	MALE016		
Code:	Cost:	Density:	Ingredients:	Recipes:					
A001	280.00	0.92	NR (SMR - 10)	MALE011	MALE012	MALE013	MALE014	MALE015	MALE016
B003	115.00	1.80	RD30	100.00	100.00	100.00	100.00	100.00	
C010	24.00	2.71	CaCO3	10.00	30.00	50.00	25.00	45.00	
D002	118.00	0.89	Naphenic Oil	20.00	20.00	20.00	20.00	20.00	
E001	385.00	5.60	ZnO	5.00	25.00	45.00	5.00	25.00	
F001	165.00	0.92	Stearic Acid	5.00	5.00	5.00	5.00	5.00	
G001	924.00	1.15	IPPD	2.00	2.00	2.00	2.00	2.00	
H001	158.00	1.80	S	2.00	2.00	2.00	2.00	2.00	
K001	396.00	1.11	TMTD - 80	1.50	1.50	1.50	1.50	1.50	
K005	708.00	1.28	CBS - 80	0.65	0.65	0.65	0.65	0.65	
Code:			Properties:						
PR001			MooneyML(1+4) 100°C	32.00	36.00	31.00	34.00	30.00	
PR002			Mooney 15 / 120°C	28.00	26.00	32.00	28.00	32.00	
PR003			Density (g/cm3)	1.00	1.12	1.16	1.13	1.10	
PR004			Hardness (°ShA)	42.00	41.00	40.00	40.00	48.00	
PR007			M300 (Mpa)	1.80	3.00	3.00	4.40	4.00	
PR008			TS (Mpa)	25.00	21.00	15.00	25.00	20.00	
PR009			ED (%)	795.00	725.00	690.00	735.00	705.00	
PR010			C-Set -20°C/24h (%)	32.00	39.00	30.00	17.00	39.00	
PR011			C-Set 0°C/24h (%)	10.00	14.00	14.00	8.00	12.00	
PR012			C-Set 23°C/2h (%)	8.00	10.00	14.00	9.00	13.00	
PR015			C-Set 70°C/24h (%)	39.00	50.00	61.00	44.00	50.00	

Criteria

Name	Min	Max	From	To	Weight	Toloff
NR (SMR - 10)	100	100				
RD30	10	75				
CaCO3	0	30				
Naphenic Oil	5	45				
ZnO	5	5				
Stearic Acid	2	2				
IPPD	2	2				
S	0.25	1.5				
TMTD - 80	0	1				
CBS - 80	0.65	2.1				
MooneyML(1+4)	30	60				
Mooney 15 / 120°C	11	32				
Density (g/cm3)	1.08	1.2				
Hardness (°ShA)	40	61	55	60		
M300 (Mpa)	1.0	8.4				
TS (Mpa)	10	25	25			
ED (%)	640	785		600		
C-Set -20°C/24h	17	77		20		
C-Set 0°C/24h (%)	8	38		10		
C-Set 23°C/2h	8	38		10		
C-Set 70°C/24h	17	61		20		

Output

Sum of recipe ratios (should be 100%)

0

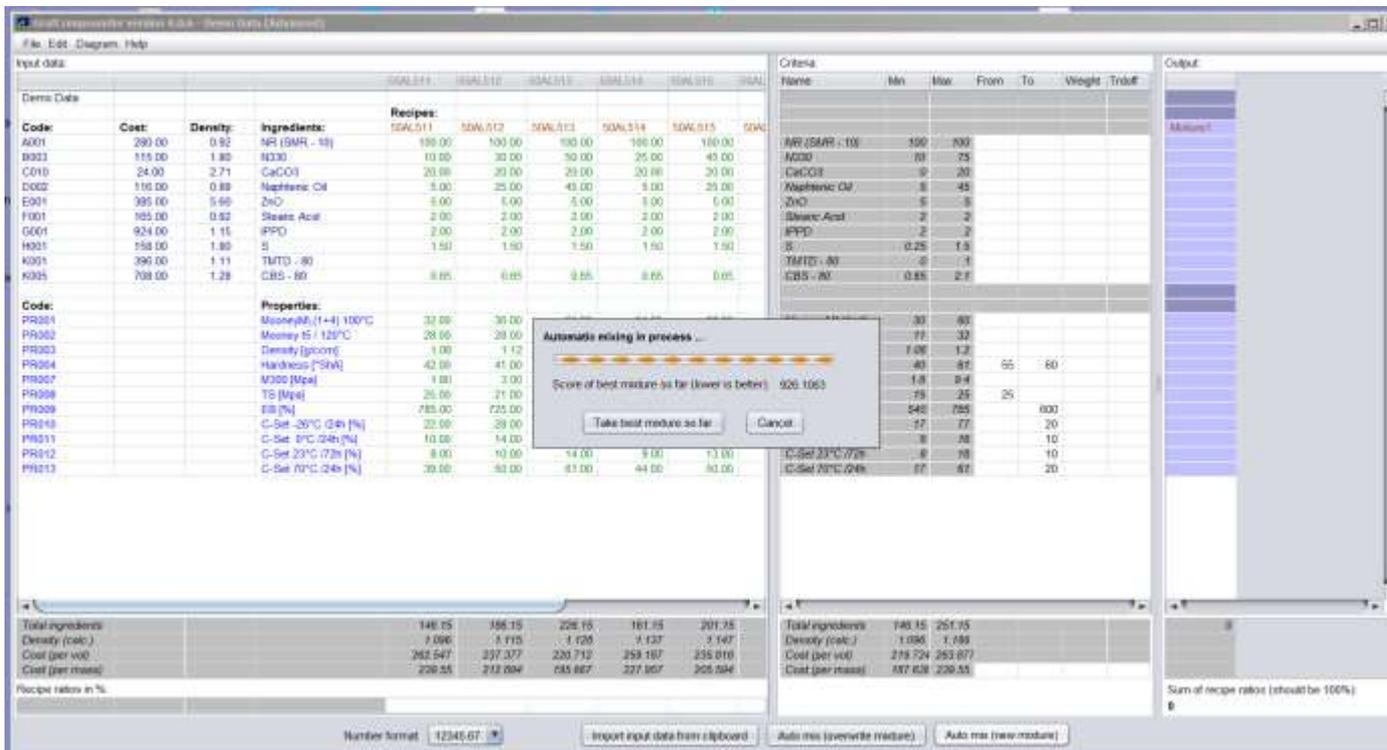
Number format: 12345.67

Import input data from clipboard

Auto mix (overwrite mature)

Auto mix (new mature)

Criteria fill in



The screenshot displays the Graf Compounder software interface. The main window is titled "Graf Compounder version 4.0.4 - Recipe Data (Advanced)". It features a menu bar (File, Edit, Diagram, Help) and a toolbar. The interface is divided into several sections:

- Input data:** A table with columns for Recipe (R001-R005), Density, Ingredients, and Recipes (R001-R005).
- Criteria:** A table with columns for Name, Min, Max, From, To, Weight, and Traft. It lists various criteria such as "MR (SMR - 10)", "M20", "CaCO3", "Naphenic Oil", "ZnO", "Stearic Acid", "PPD", "S", "TMTD - 80", and "CBS - 80".
- Output:** A vertical list of recipe names, currently showing "Mixture 1".
- Properties:** A table with columns for Code (PR001-PR013) and Properties (Mooney M1, M2, Density, Hardness, M300, TS, FR, C-Set, etc.).
- Summary:** A table at the bottom showing "Total ingredients", "Density (calc.)", "Cost (per vol)", and "Cost (per mass)" for different recipes.

A dialog box titled "Automatic mixing in process ..." is overlaid on the interface. It contains a progress bar and the text "Score of best mixture (as far (lower is better)) 920.1063". Below the progress bar are two buttons: "Take best mixture as far" and "Cancel".

Button "Automix (overwrite mixture)"

GrafCompounder versien 4.0.0 - Demo Data (Advanced)

File Edit Diagram Help

Input Data

Demo Data

Code	Cost	Density	Ingredients	Recipes					NW
				00AL511	00AL512	00AL513	00AL514	00AL515	
A001	380.00	0.90	NR (2581 - 90)	100.00	100.00	100.00	100.00	100.00	
B003	115.00	1.80	9030	10.00	30.00	50.00	25.00	45.00	
C010	24.00	2.71	CaCO3	20.00	20.00	20.00	20.00	20.00	
D002	130.00	0.89	Hyphemic CM	5.00	20.00	45.00	5.00	25.00	
E001	385.00	5.60	ZnO	5.00	5.00	5.00	5.00	5.00	
F001	165.00	0.62	Stearic Acid	2.00	2.00	2.00	2.00	2.00	
G001	924.00	1.15	IPPD	2.00	2.00	2.00	2.00	2.00	
H001	158.00	1.80	S	1.00	1.50	1.50	1.50	1.50	
K001	390.00	1.11	TMTD - 80						
K005	708.00	1.28	CB9 - 80	0.65	0.65	0.65	0.65	0.65	
Properties:									
FR001			MooneyML(1+4) 100°C	32.00	36.00	31.00	34.00	30.00	
FR002			Mooney15 / 120°C	29.00	28.00	32.00	28.00	32.00	
FR003			Density [g/cm3]	1.08	1.12	1.16	1.11	1.14	
FR004			Hardness [ShA]	43.00	41.00	40.00	40.00	43.00	
FR007			M300 [Mpa]	1.80	3.00	3.00	4.40	4.40	
FR008			TS [Mpa]	25.00	21.00	15.00	25.00	20.00	
FR009			EB [%]	795.00	725.00	690.00	715.00	705.00	
FR010			C-Set -20°C /24h [%]	22.00	26.00	30.00	17.00	19.00	
FR011			C-Set 0°C /24h [%]	10.00	14.00	14.00	8.00	12.00	
FR012			C-Set 23°C /2h [%]	8.00	10.00	14.00	8.00	13.00	
FR013			C-Set 70°C /24h [%]	26.00	50.00	61.00	44.00	50.00	

Criteria

Name	Min	Max	From	To	Weight	Tdof
NR (2581 - 10)	100	100				
9030	10	75				
CaCO3	0	20				
Hyphemic CM	5	45				
ZnO	5	5				
Stearic Acid	2	2				
IPPD	2	2				
S	0.25	1.5				
TMTD - 80	0	1				
CB9 - 80	0.65	2.1				
MooneyML(1+4)	30	80				
Mooney15 / 120°C	11	32				
Density [g/cm3]	1.08	1.2				
Hardness [ShA]	40	67	55	80		
M300 [Mpa]	1.8	8.4				
TS [Mpa]	15	25	20			
EB [%]	640	795		660		
C-Set -20°C /24h	17	77		20		
C-Set 0°C /24h [%]	8	68		10		
C-Set 23°C /2h	8	58		10		
C-Set 70°C /24h	17	87		20		

Output

Mixtest	Mixused
	100
	35.75
	20
	5
	5
	2
	2
	1.5
	0.65
	47.975
	23.7
	1.16225
	54.9875
	6.335
	23.925
	631.6875
	23.45
	10.6875
	5.5375
	44

Total ingredients 148.15 106.15 226.75 161.75 207.15

Density (calc.) 1.096 1.110 1.120 1.137 1.147

Cost (per vol) 262.547 237.277 220.712 259.107 235.878

Cost (per mass) 239.53 212.854 195.687 227.957 205.594

Recipe ratios in % 43.25

Number format: 12345.67

Import input data from clipboard

Auto mix (overwrite mixture)

Auto mix (new mixture)

Sum of recipe ratios (should be 100%) 100

Accept: "Take best mixture so far"

The screenshot displays the 'Demo Data (Advanced)' window with the following data:

Code	Cost	Density	Ingredients	Recipe:
A001	290.00	0.82	NR (SM - 1)	SOALE1 100.00, SOALE2 100.00, SOALE3 100.00, SOALE4 100.00, SOALE5 100.00
B002	115.00	1.80	R300	10.00, 30.00, 50.00, 25.00, 45.00
C013	24.00	2.21	CaCO3	30.00, 30.00, 30.00, 30.00, 30.00
D002	110.00	0.80	Naphenic Oil	5.00, 15.00, 45.00, 5.00, 25.00
E001	385.00	5.00	ZnO	5.00, 5.00, 5.00, 5.00, 5.00
F001	955.00	0.82	Sulfuric Acid	2.00, 2.00, 2.00, 2.00, 2.00
G004	324.00	1.15	PPD	2.00, 2.00, 2.00, 2.00, 2.00
H001	180.00	1.80	S	5.50, 1.50, 1.50, 1.50, 1.50
I001	280.00	1.11	TBTD - 80	
J005	700.00	1.28	CBS - 80	0.01, 0.01, 0.01, 0.01, 0.01

Code	Properties
FR001	Melting(1st) 100°C
FR002	Melting 120°C
FR003	Density(g/cm3)
FR004	Hardness [MPa]
FR007	ES(10%)
FR008	TS (10%)
FR009	ES (%)
FR010	C-Set 20°C (2h) (%)
FR011	C-Set 0°C (2h) (%)
FR012	C-Set 23°C (2h) (%)
FR013	C-Set 70°C (2h) (%)

Name	Min	Max	From	To	Weight	Truck
NR (SM - 1)	300	300				
M001	10	20				
CaCO3	0	30				
Naphenic Oil	5	45				
ZnO	5	5				
Sulfuric Acid	2	2				
PPD	2	2				
S	0.25	1.5				
TBTD - 80	0	1				
CBS - 80	0.01	0.1				

Element	Element2
NR	100
M001	38.75
CaCO3	38
Naphenic Oil	5
ZnO	5
Sulfuric Acid	2
PPD	2
S	1.5
TBTD - 80	0.01
CBS - 80	0.01

Element	Element2
Melting(1st)	47.975
Melting	23.7
Density(g/cm3)	1.90225
Hardness [MPa]	24.9675
ES(10%)	6.355
TS (10%)	33.905
ES (%)	631.6875
C-Set 20°C (2h) (%)	23.45
C-Set 0°C (2h) (%)	10.6875
C-Set 23°C (2h) (%)	3.8375
C-Set 70°C (2h) (%)	84

Total ingredients	100.75	100.75	220.75	161.75	301.75
Density (g/cm3)	1.006	1.116	1.128	1.137	1.147
Cost (per vol)	262.947	237.377	220.772	258.187	235.016
Cost (per mass)	2.6838	2.12864	1.95467	2.27557	2.05084

Total ingredients	100.75	251.75
Density (g/cm3)	1.006	1.100
Cost (per vol)	219.739	263.677
Cost (per mass)	1.67438	2.3950

Sum of recipe ratios (should be 100%)
190

Button “Automix (new mixture)”
 Accept result and evaluate

GrafCompounder version 4.6.6 - Demo Data (Advanced)

File Edit Diagram Help

Input data

Demo Data				GOALS11	GOALS12	GOALS13	GOALS14	GOALS15	GOALS16
Code	Cost	Density	Ingredients	Recipes: GOALS11	GOALS12	GOALS13	GOALS14	GOALS15	GOALS16
A001	280.00	0.92	NR (SMR - 10)	100.00	100.00	100.00	100.00	100.00	100.00
B003	115.00	1.80	N330	10.00	30.00	50.00	25.00	45.00	
C010	24.00	2.71	CaCO3	20.00	20.00	20.00	20.00	20.00	
D002	116.00	0.88	Naphthenic Oil	0.00	20.00	45.00	0.00	20.00	
E001	385.00	5.60	ZnO	0.00	0.00	0.00	0.00	0.00	
F001	165.00	0.92	Stearic Acid	2.00	2.00	2.00	2.00	2.00	
G001	924.00	1.15	PPD	2.00	2.00	2.00	2.00	2.00	
H001	158.00	1.80	S	1.00	1.00	1.00	1.00	1.00	
K001	380.00	1.11	TMTD - 80						
K005	700.00	1.28	CBS - 80	0.60	0.60	0.60	0.60	0.60	

Properties:				GOALS11	GOALS12	GOALS13	GOALS14	GOALS15	GOALS16
Code	Properties:								
PR001	MooneyML(1+4) 100°C			32.00	30.00	31.00	34.00	30.00	
PR002	Mooney IS / 120°C			28.00	28.00	32.00	28.00	32.00	
PR003	Density (g/cm)			1.09	1.12	1.16	1.13	1.16	
PR004	Hardness (°ShA)			42.00	41.00	40.00	40.00	48.00	
PR007	M300 (Pa)			1.80	3.00	3.00	4.40	4.60	
PR008	TS (Mpa)			20.00	21.00	15.00	20.00	20.00	
PR009	EB (%)			70.00	72.00	68.00	71.00	70.00	
PR010	C-Set 20°C (24h) (%)			22.00	28.00	30.00	17.00	19.00	
PR011	C-Set 0°C (24h) (%)			10.00	14.00	14.00	8.00	12.00	
PR012	C-Set 23°C (72h) (%)			8.00	10.00	14.00	9.00	13.00	
PR013	C-Set 70°C (24h) (%)			38.00	50.00	61.00	44.00	50.00	

Criteria	Min	Max	From	To	Weight	TrdOff
NR (SMR - 10)	100	100				
N330	70	75				
CaCO3	0	20				
Naphthenic Oil	0	45				
ZnO	0	5				
Stearic Acid	2	2				
PPD	2	2				
S	0.25	1.5				
TMTD - 80	0	1				
CBS - 80	0.60	2.1				
MooneyML(1+4)	30	60				
Mooney IS / 120°C	21	32				
Density (g/cm)	1.09	1.2				
Hardness (°ShA)	40	61	55	80		
M300 (Pa)	1.8	3.4				
TS (Mpa)	15	25	25			
EB (%)	50	75		60		
C-Set 20°C (24h)	17	27		20	100	
C-Set 0°C (24h) (%)	8	16		10		
C-Set 23°C (72h)	8	13		10		
C-Set 70°C (24h)	17	61		20	50	50

Output		
Mixture2	Mixture3	Mixture4
100	100	100
35.75	44.5375	37
20	2.75	6.5
5	9.3125	8.375
5	5	5
2	2	2
2	2	2
1.5	0.421875	0.60625
0	0.8625	0.675
0.65	1.800625	1.62875
47.875	38.7675	36.075
23.7	13.3375	16.525
1.16225	1.100	1.10025
54.8875	50.6775	53.475
6.335	8.3015	6.90
23.925	23.275	23.80
631.6875	573.5125	619.025
23.45	89.425	59.025
10.6875	15.17	14.05
9.5375	16.6275	14.75
44	20.0375	24.15

Total ingredients				
148.15	168.15	225.15	181.15	207.15
1.090	1.115	1.128	1.137	1.147
262.547	237.377	229.712	259.187	235.916
239.45	212.894	195.667	227.857	205.594

Recipe ratios in %		
32.5		

Total ingredients		
171.8	163.765	163.835
1.164	1.109	1.100
257.119	263.64	263.262
220.893	237.728	238.103

Sum of recipe ratios (should be 100%): 100

Number format: 12345.07

Import input data from clipboard

Auto mix (overwrite mixture)

Auto mix (new mixture)

Criteria Window: Put in additional “Weight” and “TrdOff”
Then Auto mix (new mixture), evaluate results

GrafCompounder version 4.0.6 - Demo Data (Advanced)

File Edit Diagram Help

Input data

Demo Data				SOALS11	SOALS12	SOALS13	SOALS14	SOALS15	SOAL
Code:	Cost:	Density:	Ingredients:	Recipes:					
A001	290.00	0.92	NR (SMR - 10)	SOALS11	SOALS12	SOALS13	SOALS14	SOALS15	SOAL
B001	115.00	1.90	K2O3	100.00	100.00	100.00	100.00	100.00	100.00
C010	24.00	2.71	CaCO3	10.00	30.00	50.00	25.00	45.00	
D002	115.00	0.88	Naphthalic Ox	20.00	20.00	20.00	20.00	20.00	
E001	385.00	5.50	ZnO	5.00	25.00	45.00	5.00	25.00	
F001	165.00	0.92	Stearic Acid	5.00	5.00	5.00	5.00	5.00	
G001	104.00	1.15	IPPD	2.00	2.00	2.00	2.00	2.00	
H001	158.00	1.80	S	1.50	1.50	1.50	1.50	1.50	
K001	390.00	1.11	TMTD - 80						
K005	708.00	1.29	CBS - 90	0.65	0.65	0.65	0.65	0.65	
Code:	Properties:								
PR001			MooneyML(1+4) 100°C	32.00	30.00	31.00	34.00	30.00	
PR002			Mooney 15 - 120°C	39.00	39.00	32.00	39.00	30.00	
PR003			Density (g/ccn)	1.08	1.12	1.10	1.13	1.10	
PR004			Hardness (°ShA)	42.90	41.30	40.00	48.00	48.00	
PR007			MI30 (Mpa)	1.80	3.00	3.00	4.40	4.80	
PR008			TS (Mpa)	25.00	21.00	15.00	25.00	20.00	
PR009			EB (%)	795.00	725.00	850.00	715.00	705.00	
PR010			C-Set 20°C /24h (%)	22.00	28.00	30.00	17.00	19.00	
PR011			C-Set 0°C /24h (%)	10.00	14.00	14.00	8.00	12.00	
PR012			C-Set 23°C /72h (%)	8.00	10.00	14.00	8.00	13.00	
PR013			C-Set 70°C /24h (%)	39.00	50.00	61.00	44.00	50.00	

Criteria

Name	Min	Max	From	To	Weight	Toloff
NR (SMR - 10)	100	100				
K2O3	10	25				
CaCO3	0	20				
Naphthalic Ox	5	45				
ZnO	5	5				
Stearic Acid	2	2				
IPPD	2	2				
S	0.25	1.5				
TMTD - 80	0	1				
CBS - 90	0.65	2.2				
MooneyML(1+4)	30	60				
Mooney 15 / 120°C	11	32				
Density (g/ccn)	1.08	1.2				
Hardness (°ShA)	40	67	55	80		
MI30 (Mpa)	1.8	3.4				
TS (Mpa)	15	25	25			
EB (%)	540	785		800		
C-Set 20°C /24h	17	22		20 100		
C-Set 0°C /24h (%)	8	18		10		
C-Set 23°C /72h	8	18		10		
C-Set 70°C /24h	17	61		20 50 50		

Output

MatureC	Mature3	Mature4
100	100	100
35.75	44.5375	37
20	2.75	0.8
5	9.3125	8.375
5	5	5
2	2	2
2	2	2
1.5	0.421875	0.6925
0	0.8625	0.675
0.65	1.90625	1.62875
47.975	39.7675	38.075
23.7	13.3375	16.325
1.16225	1.108	1.10525
54.9675	56.6775	53.475
6.335	8.3615	8.89
23.925	23.275	23.68
631.6875	573.5125	618.625
23.45	89.425	89.125
10.6875	10.17	14.00
9.5375	16.6275	14.75
44	20.0375	24.15

Total ingredients 146.15 188.75 226.75 181.15 301.15

Density (calc) 1.096 1.175 1.128 1.137 1.147

Cost (per vol) 262.547 237.377 220.712 269.187 235.816

Cost (per mass) 239.55 212.894 195.967 227.957 205.594

Recipe ratios in % 22.8

Number format 12345.67

Import input data from clipboard Auto mix (overwrite mixture) Auto mix (new mixture)

Sum of recipe ratios (should be 100%) 100

Criteria Window: Put in cost target in "Cost per mass" cell

GrafCompounder version 4.0.0 - Demo Data (Advanced)

File Edit Diagram Help

Input data

Demo Data	GOAL511	GOAL512	GOAL513	GOAL514	GOAL515
Code:					
A001	280.00	0.02			
B003	115.00	1.80			
C010	24.00	2.71			
D002	110.00	0.09			
E001	385.00	5.00			
F001	165.00	0.02			
G001	924.00	1.15			
H001	158.00	1.80			
K001	390.00	1.11			
K005	708.00	1.29			

Recipe:	GOAL511	GOAL512	GOAL513	GOAL514	GOAL515
HR (SMR - 10)	100.00	100.00	100.00	101.00	
H330	10.00	30.00	30.00	35.00	
CaCO3	20.00	20.00	20.00	20.00	
Highline Oil	5.00	25.00	45.00	5.00	
ZnO	5.00	5.00	5.00	5.00	
Stearic Acid	2.00	2.00	2.00	2.00	
IPFD	2.00	2.00	2.00	2.00	
S	1.50	1.50	1.50	1.50	
TMTD - 80					0.05
CBS - 80					0.05

Properties:	GOAL511	GOAL512	GOAL513	GOAL514	GOAL515
MooneyML (1+4) 100°C	32.00	30.00	31.00	34.00	
Mooney 15 / 120°C	29.00	28.00	32.00	28.00	
Density @15cm	1.08	1.12	1.10	1.13	
Hardness (°ShA)	42.00	41.00	40.00	48.00	
MS00 (Mpa)	1.00	3.00	3.00	4.40	
TS (Mpa)	25.00	21.00	15.00	25.00	
EB (%)	785.00	725.00	680.00	715.00	
C-Set -32°C/24h (%)	22.00	29.00	30.00	17.00	
C-Set 0°C/24h (%)	10.00	14.00	14.00	8.00	
C-Set 23°C/72h (%)	8.00	10.00	14.00	8.00	
C-Set 70°C/24h (%)	38.00	50.00	61.00	44.00	

Total ingredients	GOAL511	GOAL512	GOAL513	GOAL514	GOAL515
Total ingredients	146.75	186.75	226.75	187.75	
Density (calc.)	1.096	1.115	1.128	1.137	
Cost (per vol)	262.547	237.377	220.712	259.187	
Cost (per mass)	239.55	212.894	195.687	227.957	

Recipe ratios in %

Recipe ratios in %	GOAL511	GOAL512	GOAL513	GOAL514	GOAL515
HR (SMR - 10)	100.00	100.00	100.00	101.00	
H330	10.00	30.00	30.00	35.00	
CaCO3	20.00	20.00	20.00	20.00	
Highline Oil	5.00	25.00	45.00	5.00	
ZnO	5.00	5.00	5.00	5.00	
Stearic Acid	2.00	2.00	2.00	2.00	
IPFD	2.00	2.00	2.00	2.00	
S	1.50	1.50	1.50	1.50	
TMTD - 80					0.05
CBS - 80					0.05

Criteria

Name	Min	Max	From	To	Weight	Tidstf
HR (SMR - 10)	100	100				
H330	10	75				
CaCO3	0	30				
Highline Oil	5	45				
ZnO	5	5				
Stearic Acid	2	2				
IPFD	2	2				
S	0.25	1.5				
TMTD - 80	0	7				
CBS - 80	0.65	2.1				
MooneyML (1+4)	30	40				
Mooney 15 /	17	30				
Density @15cm	1.08	1.2				
Hardness (°ShA)	40	61	55	60		
MS00 (Mpa)	1.8	9.4				
TS (Mpa)	15	25	25			
EB (%)	540	785		600		
C-Set -20°C/24h	17	77		20	100	
C-Set 0°C/24h	8	16		10		
C-Set 23°C/72h	8	18		10		
C-Set 70°C/24h	17	61		20	50	50

Output

Mixture2	Mixture3	Mixture4	Mixture5
100	100	100	100
36.75	44.5375	37	53.2625
20	2.75	6.5	4.35
5	9.3125	9.375	13.25
5	5	5	5
2	2	2	2
2	2	2	2
1.0	0.421875	0.65625	0.521875
0.675	0.9525	0.675	0.7825
0.65	1.900625	1.62675	1.784625
47.975	39.7675	38.075	40.595
23.7	13.2375	16.525	14.048
1.10225	1.108	1.10025	1.129575
54.9875	56.6775	53.475	59.435
6.595	6.3515	6.83	9.0085
23.925	23.275	20.85	21.9125
631.6875	573.5125	619.625	558.875
23.45	09.425	58.125	68.135
10.6875	15.17	14.05	15.13
9.5375	16.6275	14.75	17.7825
44	20.0375	24.15	24.1775

Total ingredients	GOAL511	GOAL512	GOAL513	GOAL514	GOAL515
Total ingredients	146.75	186.75	226.75	187.75	
Density (calc.)	1.096	1.108	1.108	1.129	
Cost (per vol)	257.719	263.64	263.342	258.246	
Cost (per mass)	220.893	207.728	208.703	229.987	

Sum of recipe ratios (should be 100%)

100

Number format: 12345.67

Input input data from clipboard Auto mix (overwrite mixture) Auto mix (merge)

GraCompouder version 4.0.6 - Demo Data (Advanced)

File Edit Diagram Help

Input data

Demo Data	50AL511	50AL512	50AL513	50AL514	50AL515
Code:					
A001	200.00	0.92	NR (SMR - 10)	100.00	100.00
B003	115.00	1.80	FD30	10.00	30.00
C010	24.00	2.71	CaCO3	20.00	20.00
D002	116.00	0.89	Naphenic Oil	5.00	25.00
E001	385.00	5.00	ZnO	5.00	5.00
F001	105.00	0.92	Stearic Acid	2.00	2.00
G001	924.00	1.15	PPG	2.00	2.00
H001	156.00	1.80	S	1.50	1.50
I001	396.00	1.11	TMTD - 80		
L001	708.00	1.28	CBS - 80	0.05	0.05
Code:			Properties:		
PR001			MooneyML(1+4) 100°C	32.00	36.00
PR002			Mooney IS / 120°C	28.00	29.00
PR003			Density (g/cm3)	1.08	1.12
PR004			Hardness (°SNA)	42.00	41.00
PR007			M300 (Mpa)	1.80	3.00
PR008			TS (Max)	25.00	21.00
PR009			EB (%)	785.00	725.00
PR010			C-Set -20°C (24h) (%)	22.00	20.00
PR011			C-Set 0°C (24h) (%)	10.00	14.00
PR012			C-Set 23°C (72h) (%)	8.00	10.00
PR013			C-Set 70°C (24h) (%)	39.00	50.00

Total ingredients: 148.15 / 186.15
 Density (calc): 1.088 / 1.115
 Cost (per vol): 202.547 / 237.377
 Cost (per mass): 239.55 / 212.894

Recipe ratios in %

Number format: 12345.07

Criteria

Name	Min	Max	From	To	Weight	Toloff

Output

	Material2	Material3	Material4	Material5
100	100	100	100	100
35.75	44.5375	37	53.2625	
20	2.75	6.5	4.30	
5	8.3125	8.375	12.2625	
5	5	5	5	
2	2	2	2	
2	2	2	2	
1.5	0.421875	0.66025	0.521875	
	0.9525	0.675	0.7625	
0.05	1.900625	1.62875	1.784625	
47.975	39.7075	38.075	40.565	
23.7	13.3375	16.625	14.045	
1.16225	1.106	1.10025	1.129575	
54.9875	56.6775	53.475	50.435	
6.335	8.3615	6.90	6.9066	
23.025	23.275	23.65	21.9125	
631.6675	573.5125	619.625	550.875	
23.45	69.495	50.125	66.125	
10.8875	15.17	14.05	15.13	
9.5375	16.6275	14.75	17.7825	
44	20.0375	24.15	24.1775	
171.9	166.785	163.835	162.964	
1.164	1.109	1.108	1.129	
257.110	263.64	263.342	258.246	
220.893	237.730	238.103	226.907	

Sum of recipe ratios (should be 100%): 100

Frequency Distribution

Ingredients:

- NR (SMR - 10)
- FD30
- CaCO3
- Naphenic Oil
- ZnO
- Stearic Acid
- PPG
- S
- TMTD - 80
- CBS - 80

Properties:

- MooneyML(1+4) 100°C
- Mooney IS / 120°C
- Density (g/cm3)
- Hardness (°SNA)
- M300 (Mpa)
- TS (Max)
- EB (%)
- C-Set -20°C (24h) (%)
- C-Set 0°C (24h) (%)
- C-Set 23°C (72h) (%)
- C-Set 70°C (24h) (%)

Distribution for ingredient FD30

Distribution for ingredient CaCO3

Distribution for ingredient Naphenic Oil

Distribution for property MooneyML(1+4) 100°C

Distribution for property Hardness (°SNA)

Pull down menu: "Diagram", "Frequency Distribution" and make selection

GrafCompounder version 4.0.6 - Demo data (Advanced)

File Edit Diagram Help

Input data

Code	Cost	Density	Ingredients
A001	290.00	0.92	MR (SMR - 10)
B000	115.00	1.80	K2O3
C010	24.00	2.71	CaCO3
D002	116.00	0.89	Naphthenic Oil
E001	385.00	5.60	ZnO
F001	185.00	0.92	Stearic Acid
G001	824.00	1.15	IPP0
H001	158.00	1.80	S
K001	396.00	1.11	TMTD - 80
K005	708.00	1.29	CBS - 80

Code	Properties
PR001	MooneyML(1+4) 100°C
PR002	Mooney 15 - 120°C
PR003	Density (g/cm³)
PR004	Hardness (°ShA)
PR007	M300 (Mpa)
PR008	TS (Mpa)
PR009	EB (%)
PR010	C-Set -20°C /24h (%)
PR011	C-Set 0°C /24h (%)
PR012	C-Set 23°C /2h (%)
PR013	C-Set 70°C /24h (%)

Total ingredients
Density (calc)
Cost (per vol)
Cost (per mass)

Recipe ratios in %

2D Scatter Plot
9 of total 0 recipes included

X-Axis: (Please select)

Y-Axis: (Please select)

Please define the X-Axis.

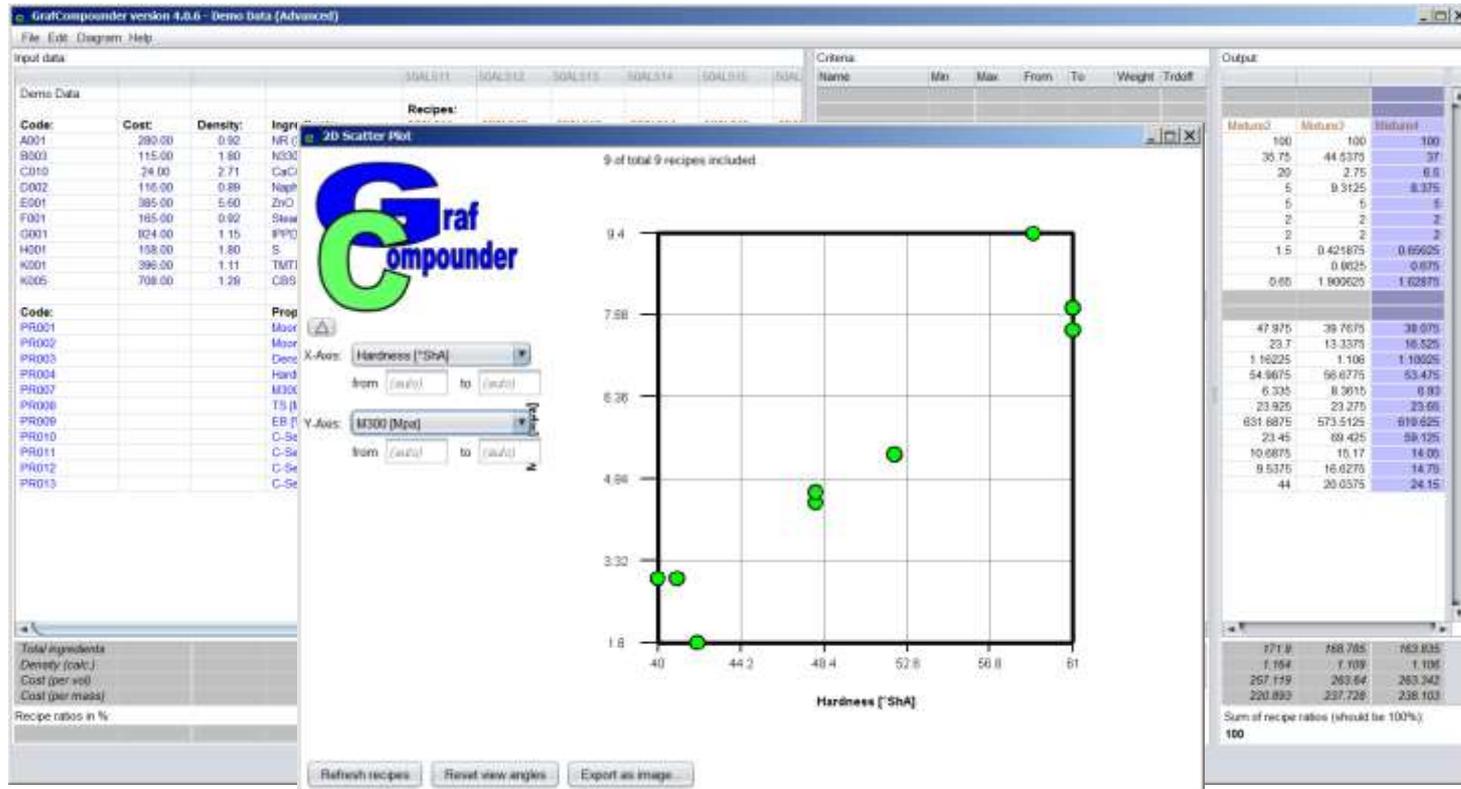
Refresh recipes... | Show new recipes | Load on startup

Number format: 12345.67 | Import input data from clipboard | Auto mix (reverts mixture) | Auto mix (new mixture)

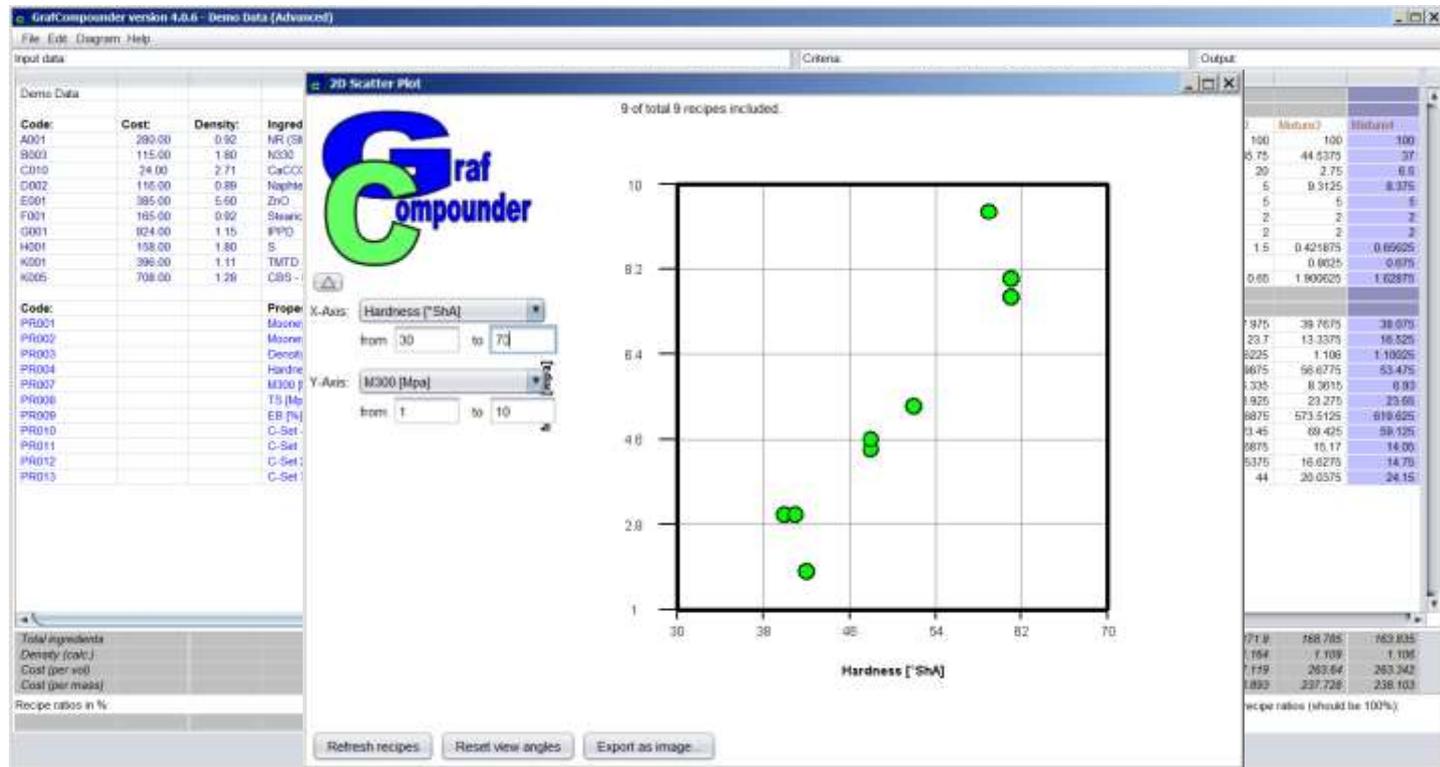
Material	Weight	Volume
100	100	
4.5375	37	
2.75	0.6	
9.5125	8.375	
5	5	
2	2	
2	2	
42.1875	0.65625	
0.8025	0.675	
809.025	1.02875	
9.7675	38.075	
3.3375	16.525	
1.106	1.10525	
6.6775	53.475	
8.3675	0.93	
23.275	23.66	
3.5125	619.625	
69.425	88.125	
10.17	14.00	
6.6275	14.70	
0.0575	24.15	
66.785	763.835	
1.109	1.110	
263.64	263.242	
97.726	258.103	

(should be 100%)

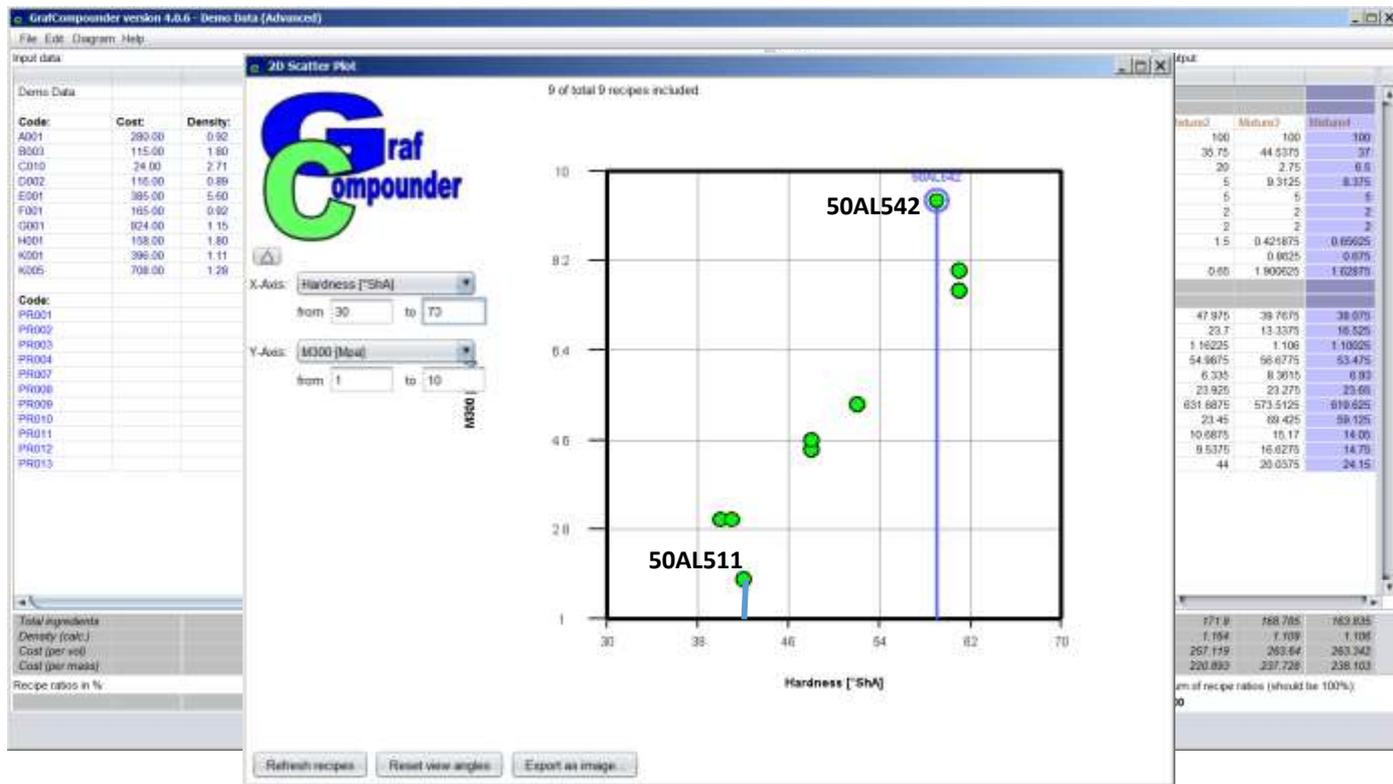
Pull down menu: “Diagram”, “2D Scatter Plot”



Pull down menu: “Diagram”, “2D Scatter Plot”, make selection



Pull down menu: “Diagram”, “2D Scatter Plot”, make selection
Format Axis



Pull down menu: “Diagram”, “2D Scatter Plot”, Highlight outliers

GrafCompounder version 4.0.6 - F:\Seminare\01_Seminars\Course 2022\CSMO Seminar_CAR...

File Edit Diagram Help

Input data:

Demo Data	50AL511	50AL512	50AL513	50AL514	50AL515	50AL516
Code:	50AL511	50AL512	50AL513	50AL514	50AL515	50AL516
Cost:						
Density:						
Ingredients:						
A001	280.00	0.92	NR (SBR - 10)	100.00	100.00	100.00
B003	115.00	1.80	N200	30.00	50.00	25.00
C010	24.00	2.71	CaCO3	20.00	20.00	20.00
D002	116.00	0.89	Naphthen Oil	5.00	20.00	45.00
E001	385.00	5.00	ZnO	5.00	5.00	5.00
F001	185.00	0.92	Stearic Acid	2.00	2.00	2.00
G001	924.00	1.15	BPPO	2.00	2.00	2.00
H001	156.00	1.80	S	1.50	1.50	1.50
K001	396.00	1.11	TMTD - 80			
K005	706.00	1.28	CBS - 80	0.85	0.85	0.85
Recipes:						
PR001	MooneyML(1+4) 100°C	32.00	35.00	31.00	34.00	33.00
PR002	Mooney IS / 120°C	28.00	28.00	32.00	29.00	32.00
PR003	Density (g/ccm)	1.08	1.12	1.16	1.13	1.16
PR004	Hardness (°ShA)	42.00	41.00	40.00	48.00	48.00
PR007	M300 (Mpa)	1.80	3.00	3.00	4.40	4.60
PR008	TS (Mpa)	25.00	21.00	15.00	25.00	20.00
PR009	EB (%)	785.00	720.00	690.00	715.00	706.00
PR010	C-Ser -26°C /24h (%)	22.00	28.00	30.00	17.00	19.00
PR011	C-Ser 0°C /24h (%)	10.00	14.00	14.00	8.00	12.00
PR012	C-Ser 23°C /72h (%)	8.00	10.00	14.00	8.00	11.00
PR013	C-Ser 70°C /24h (%)	39.00	50.00	51.00	44.00	50.00

Criteria:

Name	Min	Max	From	To	Weight	Total
NR (SBR - 10)	100	100				
N200	25	25				
CaCO3	0	20				
Naphthen Oil	5	45				
ZnO	5	5				
Stearic Acid	2	2				
BPPO	2	2				
S	0.25	1.5				
TMTD - 80	0	1				
CBS - 80	0.65	3.1				
MooneyML(1+4)	30	80				
Mooney IS / 120°C	11	32				
Density (g/ccm)	1.11	1.2				
Hardness (°ShA)	40	61	55	60		
M300 (Mpa)	3	8.4				
TS (Mpa)	15	25	25			
EB (%)	640	715	600			
C-Ser -26°C /24h (%)	17	77	20	100		
C-Ser 0°C /24h (%)	8	38	10			
C-Ser 23°C /72h (%)	8	35	10			
C-Ser 70°C /24h (%)	17	81	20	100	50	

Output:

Mixture3	Mixture4	Mixture5
100	100	100
75	44.5375	37
20	2.75	6.5
5	0.3125	0.375
5	5	5
2	2	2
2	2	2
1.5	0.421875	0.65625
	0.8625	0.875
85	1.90625	1.62875
3.75	39.7675	38.075
25	13.3375	16.525
175	1.166	1.10025
135	98.6775	53.475
135	8.3615	5.93
125	23.275	23.85
175	573.5125	619.625
45	68.425	99.125
175	15.17	14.05
175	16.0275	14.75
44	20.0375	24.15

Total ingredients: 146.75, 186.15, 226.15, 191.75, 201.15, 251.15
 Density (calc.): 1.096, 1.115, 1.125, 1.137, 1.147, 1.17
 Cost (per vol): 262.547, 237.377, 230.712, 259.187, 235.818, 219.72
 Cost (per mass): 239.58, 232.894, 192.867, 227.957, 205.594, 187.80

Recipe ratios in %: 46.25

Number format: 12345.67

Input input data from clipboard | Auto mix (overwrite mixture) | Auto mix (new mixture)

Switch to Data Window, Deactivate Datasets with “right click”

The screenshot displays two windows from the GrafCompounder software. The main window on the left shows a table of ingredients and properties. The '2D Scatter Plot' window on the right shows a plot of M300 (Mpa) vs. Hardness [°ShA].

Ingredients Table:

Code	Cost	Density	Ingredients
A001	280.00	0.92	HR (SMR - 10)
B000	115.00	1.00	N200
C010	24.00	2.71	CaCO3
D002	116.00	0.89	Naphtenic Oil
E001	385.00	5.00	ZnO
F001	165.00	0.92	Silicic Acid
G001	924.00	1.15	PPD
H001	158.00	1.80	S
K001	398.00	1.11	TiO2 - 80
K006	708.00	1.28	OSB - 80

Properties Table:

Code	Properties
PR001	MooneyML(1+4) 100°C
PR002	Mooney ML 120°C
PR003	Density (g/ccm)
PR004	Hardness [°ShA]
PR007	M300 (Mpa)
PR008	TS (Mpa)
PR009	EB (%)
PR010	C-Set 26°C (24h) (%)
PR011	C-Set 0°C (24h) (%)
PR012	C-Set 23°C (72h) (%)
PR013	C-Set 70°C (24h) (%)

2D Scatter Plot Window:

- X-Axis: Hardness [°ShA] (range: 30 to 70)
- Y-Axis: M300 (Mpa) (range: 1 to 10)
- 7 of total 9 recipes included. - Discarded 2 recipes the user excluded from automatic mixing.

Main Window Buttons: Refresh recipes, Reset view angles, Export as image.

Click “Refresh Recipes” in “Diagram”; “2D Scatter Plot”

File Edit Diagram Help

Input data:

	00%L014	00%L010	00%L012	00%L014	00%L016	00%L016	00%L017	00%L018	00%L042
Ingredients:									
NR (SBR - 10)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
N330	10.00	30.00	50.00	25.00	45.00	75.00	45.00	65.00	50.00
CaCO3	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Naphthene Oil	5.00	25.00	40.00	5.00	35.00	45.00	5.00	25.00	10.00
ZnO	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Stearic Acid	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
IPPD	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
S	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	0.25
TMTD - 80									1.00
CBS - 80	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	2.15
Properties:									
MooneyML(1+4) 100°C	32.00	38.00	51.00	34.00	30.00	42.00	60.00	38.00	41.00
MooneyML 120°C	28.00	28.00	32.00	28.00	32.00	22.00	20.00	25.00	11.00
Density [g/cm³]	1.08	1.12	1.16	1.13	1.18	1.19	1.19	1.20	1.11
Hardness [ShA]	42.00	41.00	40.00	48.00	48.00	52.00	61.00	61.00	58.00
M300 [Mpa]	1.80	3.00	3.00	4.40	4.00	5.30	8.00	7.60	9.40
TS [Mpa]	25.90	21.00	15.00	25.00	20.00	15.30	23.00	18.00	23.00
ER [%]	785.00	720.00	690.00	715.00	705.00	615.00	660.00	690.00	540.00
C-Set -25°C (24h) [%]	32.00	28.00	30.00	17.00	19.00	35.00	29.00	27.00	77.00
C-Set 0°C (24h) [%]	10.00	14.00	14.00	8.00	12.00	16.00	13.00	12.00	16.00
C-Set 20°C (72h) [%]	8.00	10.00	14.00	9.00	13.00	10.00	10.00	17.00	16.00
C-Set 70°C (24h) [%]	39.00	30.00	31.00	44.00	30.00	54.00	44.00	50.00	17.00

Criteria:

Name	Min	Max	From	To	Wei	TrkOff
NR (SBR - 10)	100	100				
N330	25	75				
CaCO3	20	20				
Naphthene Oil	5	40				
ZnO	5	5				
Stearic Acid	2	2				
IPPD	2	2				
S	1.5	1.5				
TMTD - 80	0	0				
CBS - 80	0.65	0.65				
MooneyML(1+4)	30	60				
MooneyML 120°C	20	30				
Density	1.12	1.2				
Hardness	40	61	55	55		
M300 [Mpa]	3	8				
TS [Mpa]	15	25	25			
ER [%]	580	720	600			
C-Set -25°C	17	35	20	100		
C-Set 0°C	8	16	10			
C-Set 20°C	8	17	10			
C-Set 70°C	44	61	20	50	30	

Output:

Volume	MooneyML(1+4)	MooneyML 120°C	MooneyML 120°C	MooneyML 120°C
100	100	100	100	100
38.75				
20				
5				
5				
2				
2				
1.5				
	0.675	0.675	0.7625	
0.65	1.02875	1.02875	1.784625	
47.975	38.075	38.075	40.565	
29.7	19.525	19.525	14.045	
1.10225	1.10025	1.10025	1.129575	
54.9875	53.475	53.475	59.425	
6.335	6.90	6.90	9.0095	
23.925	25.95	23.65	21.9125	
631.6875	619.625	619.625	550.875	
25.45	59.125	59.125	66.125	
10.6875	14.95	14.95	15.13	
8.5375	14.75	14.75	17.7825	
44	24.15	24.15	24.1775	

Recipe ratios in %:

	00%L014	00%L010	00%L012	00%L014	00%L016	00%L016	00%L017	00%L018	00%L042
140.15	198.15	226.75	161.75	201.75	257.75	187.75	221.75	172.25	
1.096	1.718	1.128	1.137	1.147	1.171	1.185	1.198	1.111	
262.047	237.377	220.712	259.187	235.616	219.724	265.201	234.718	262.877	
229.55	212.884	195.667	227.357	205.504	187.636	215.496	187.407	237.513	

Number normal 12946.67

Import input data from clipboard Auto mix (overwrite mixture) Auto mix (new mixture)

Click “Automix (new mixture)” and pull down menu select “Append mixture column to input recipes”

File Edit Diagram Help

Input data

	SOAL511	SOAL512	SOAL513	SOAL514	SOAL515	SOAL516	SOAL517	SOAL518	SOAL519	SOAL542	Material
kg	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100
l	10.00	30.00	50.00	25.00	45.00	75.00	45.00	65.00	50.00	50.00	37
cm ³	20.00	30.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	6.5
g	5.00	25.00	45.00	5.00	25.00	45.00	5.00	25.00	10.00	10.00	8.375
ml	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3
kg	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2
l	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2
cm ³	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	0.65625
g	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.675
ml											1.82875
l											
l	32.00	36.00	31.00	34.00	30.00	42.00	60.00	39.00	41.00	39.075	
l	26.00	26.00	32.00	20.00	32.00	22.00	20.00	25.00	11.00	16.525	
l	1.08	1.12	1.16	1.11	1.16	1.18	1.18	1.20	1.11	1.10025	
l	42.00	41.00	40.00	48.00	48.00	52.00	61.00	61.00	59.00	53.475	
l	1.80	3.00	3.00	4.40	4.00	5.30	8.00	7.00	9.40	8.83	
l	25.00	21.50	15.00	25.00	20.00	15.30	32.00	18.00	23.00	23.61	
l	395.00	725.00	890.00	715.00	705.00	815.00	560.00	590.00	540.00	619.625	
l	22.00	28.00	30.00	17.00	19.00	16.00	29.00	27.00	77.00	58.125	
l	10.00	14.00	14.00	8.00	12.00	16.00	13.00	12.00	16.00	14.05	
l	8.00	10.00	14.00	9.00	13.00	16.00	10.00	17.00	16.00	14.75	
l	30.00	50.00	61.00	44.00	50.00	54.00	44.00	50.00	17.00	24.15	
l	148.15	186.15	226.15	381.15	201.15	251.15	391.15	221.15	172.35	163.835	
l	1.096	1.115	1.128	1.137	1.147	1.171	1.185	1.189	1.111	1.106	
l	262.947	337.377	330.712	259.187	235.816	279.724	353.351	234.118	263.877	263.342	
l	239.55	232.894	195.667	227.957	205.584	187.638	215.498	197.401	227.513	231.103	
Recipe ratios in %	32.8								87.6		

Criteria

Name	Min	Max	From	To	Wes	Tidoff
WR (SMR)	100	700				
MO30	25	75				
CaCO3	20	20				
Naphthenic Oil	5	45				
ZnO	5	5				
Sulfuric Acid	2	2				
WFO	2	2				
IS	1.5	1.3				
TMTD - 80	0	0				
CBS - 80	0.60	0.65				

Output

Mixture2	Mixture3	Mixture4	Mixture5
100	100	100	100
35.75	37	37	53.2625
20	6.5	6.5	4.35
5	8.375	8.375	13.2625
5	5	5	5
2	2	2	2
2	2	2	2
1.5	0.65625	0.65625	0.521675
	0.675	0.675	0.7825
0.65	1.62875	1.62875	1.794625
47.975	38.075	38.075	40.565
23.7	16.525	16.525	14.045
1.10225	1.10025	1.10025	1.129675
84.9875	53.475	53.475	59.435
0.330	0.90	0.90	0.9085
23.625	23.05	23.05	21.8125
851.6875	819.625	819.625	560.875
23.45	59.125	59.125	66.125
10.6825	14.05	14.05	15.13
9.5375	14.75	14.75	17.7825
44	24.15	24.15	24.1775

Sum of recipe ratios (should be 100%): 100

Number format: 12345.67

Import input data from clipboard

Auto mix (overwrite mixture)

Auto mix (new mixture)

Data Column “gc-unconfirmed” and background color different

File Edit Diagram Help

Input data

	SOAL511	SOAL512	SOAL513	SOAL514	SOAL515	SOAL516	SOAL517	SOAL518	SOAL519	Material
10)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100
Oil	10.00	30.00	50.00	25.00	45.00	75.00	45.00	65.00	50.00	37
M	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	9.9
	5.00	25.00	40.00	5.00	25.00	45.00	5.00	25.00	10.00	8.275
	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5
	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2
	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2
	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	0.25
										0.0025
	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	1.02075
11) 100°C	32.00	36.00	31.00	34.00	30.00	42.00	40.00	39.00	41.00	38.075
120°C	28.00	29.00	32.00	28.00	32.00	27.00	20.00	25.00	11.00	16.525
1ccm	1.08	1.12	1.11	1.11	1.11	1.19	1.19	1.20	1.11	1.10025
1PSA	42.00	41.00	40.00	48.00	48.00	52.00	61.00	61.00	59.00	53.475
1	1.80	3.00	3.00	4.40	4.40	5.20	6.00	7.50	8.40	6.80
	25.00	21.00	15.00	25.00	20.00	13.20	23.00	19.00	21.00	19.00
C 24h (%)	78.00	75.00	68.00	71.00	70.00	61.00	56.00	58.00	54.00	60.00
	22.00	20.00	30.00	11.00	19.00	31.00	20.00	27.00	77.00	17.00
1.24h (%)	10.00	14.00	14.00	9.00	12.00	10.00	13.00	12.00	16.00	10.00
1.72h (%)	8.00	10.00	14.00	9.00	13.00	10.00	17.00	17.00	16.00	10.00
1.24h (%)	39.00	50.00	61.00	44.00	50.00	54.00	44.00	50.00	47.00	50.00

Recipe ratios in %

	SOAL511	SOAL512	SOAL513	SOAL514	SOAL515	SOAL516	SOAL517	SOAL518	SOAL519
146.18	186.15	226.15	181.25	201.25	251.15	181.15	221.15	172.05	163.65
1.096	1.118	1.128	1.137	1.147	1.171	1.182	1.188	1.171	1.108
262.547	237.377	220.712	259.187	218.056	219.724	255.351	234.715	263.677	263.342
239.55	212.894	195.867	222.957	205.694	187.638	215.498	197.401	227.519	238.709

Recipe ratios in %

	SOAL511	SOAL512	SOAL513	SOAL514	SOAL515	SOAL516	SOAL517	SOAL518	SOAL519
32.5									67.5

Number format: 12345.67

Import input data from clipboard Auto mix (overwrites mixture) Auto mix (new mixture)

Criteria

Name	Min	Max	From	To	Wk	Truff
AVR (SMR -	100	100				
AD30	25	75				
CaCO3	20	20				
Aliphatic Cr	5	45				
ZnO	5	5				
Stearic Acid	2	2				
IPPD	2	2				
S	1.5	1.5				
TMPO - 80	0	0				
CBF - 80	0.65	0.65				
Alkoney(M2)H	30	60				
Alkoney(M7)	30	30				
Density	1.12	1.2				
Hardness	40	60	50	50		
M200 (Pa)	3	8				

Output

Material	Material	Material	Material
100	100	100	100
35.75	37	37	53.2625
20	6.5	6.5	4.35
5	8.375	8.375	13.2625
5	5	5	5
2	2	2	2
2	2	2	2
1.5	0.65025	0.65025	0.621875
	0.675	0.675	0.7625
0.65	1.62875	1.62875	1.794625
47.975	38.875	38.875	40.565
23.7	16.525	16.525	14.045
1.16225	1.10025	1.10025	1.129575
54.9675	53.475	53.475	58.435
6.335	6.80	6.80	9.095
21.925	23.65	23.65	21.9125
631.6875	619.625	619.625	550.875
33.45	58.525	58.525	66.125
10.6675	14.05	14.05	15.15
9.5375	14.75	14.75	17.7825
44	24.15	24.15	24.1775

Sum of recipe ratios (should be 100%): 100

Time: 181.21 281.11
Density (calc.): 1.125 1.086
Cool (per vol): 219.7; 258.11
Cool (per): 187.8; 207.8

Data Column “gc-unconfirmed” click “round values to two decimal places”

The screenshot shows the GraCompounder software interface. The main window displays a table with columns for various material properties and recipes. A context menu is open over a cell in the 'Recipe ratios in %' section, showing options like 'Copy input table', 'Paste cells here', and 'Clear marked cells'. The cell being edited contains the text 'gc-unconfirmed'. The interface also shows a 'Criteria' panel on the right and a 'Number format' dropdown at the bottom.

Data Column “gc-unconfirmed” put in confirmed data and clear cell “gc-unconfirmed”

File Edit Program Help

Input data

	SOAL511	SOAL512	SOAL513	SOAL514	SOAL515	SOAL516	SOAL517	SOAL518	SOAL519	Mixture0
100	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
30	10.00	30.00	50.00	20.00	45.00	75.00	45.00	65.00	50.00	37.00
20	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	6.50
5	5.00	20.00	45.00	5.00	25.00	45.00	5.00	20.00	10.00	8.38
5	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
2	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	0.60
0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.60
0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	1.63
32	32.00	36.00	31.00	34.00	30.00	42.00	60.00	39.00	41.00	38.00
28	28.00	28.00	32.00	28.00	32.00	22.00	20.00	25.00	11.00	16.50
1.08	1.08	1.12	1.16	1.13	1.16	1.19	1.19	1.20	1.11	1.10
42	42.00	41.00	40.00	40.00	48.00	52.00	61.00	61.00	59.00	53.48
1.90	1.90	5.00	3.00	4.40	4.60	5.30	8.00	7.60	9.40	6.90
25	25.00	21.00	15.00	25.00	20.00	15.00	23.00	18.00	23.00	23.65
785	785.00	725.00	690.00	715.00	705.00	815.00	960.00	590.00	540.00	619.63
22	22.00	26.00	30.00	17.00	19.00	35.00	29.00	27.00	27.00	59.15
10	10.00	14.00	14.00	8.00	12.00	16.00	13.00	12.00	16.00	14.25
8	8.00	10.00	14.00	9.00	13.00	16.00	10.00	17.00	10.00	14.75
38	38.00	50.00	61.00	44.00	50.00	54.00	44.00	50.00	17.00	24.15

Recipe ratios in %

	SOAL511	SOAL512	SOAL513	SOAL514	SOAL515	SOAL516	SOAL517	SOAL518	SOAL519	Mixture0
32.5	146.15	186.15	226.15	261.15	201.15	257.15	391.15	227.15	172.35	163.88
1.096	1.096	1.115	1.129	1.137	1.147	1.171	1.195	1.196	1.177	1.106
262.547	262.547	237.377	220.712	259.167	335.816	219.724	255.351	234.170	263.677	263.345
239.55	239.55	212.894	195.667	207.067	205.594	187.638	215.488	197.401	237.513	238.708

32.5

67.5

Number format: 12345.67

Import input data from clipboard

Auto mix (overwrite mixture)

Auto mix (new mixture)

Criteria

Name	Min	Max	From	To	Wei	Troff
NR (SMR)	50	100				
W30	20	75				
CaCO3	6.5	20				
Naphtenic Oil	5	45				
ZnO	5	5				
Stearic Acid	2	2				
PPD	2	2				
S	0.65	1.5				
TMTD - 80	0	0.68				
CBS - 80	0.65	1.63				
Moosey MLTH	30	80				
Moosey IS /	16.53	32				
Density	1.1	1.2				
Hardness	40	81	55	55		
M350 (Mpa)	3	8				
TS (Mpa)	15	25	25			
ER (%)	580	725		600		
C-Set -26°C	17	59.13		20	100	
C-Set 0°C	8	16		10		
C-Set 23°C	9	17		10		
C-Set 70°C	24.15	81		20	50	50

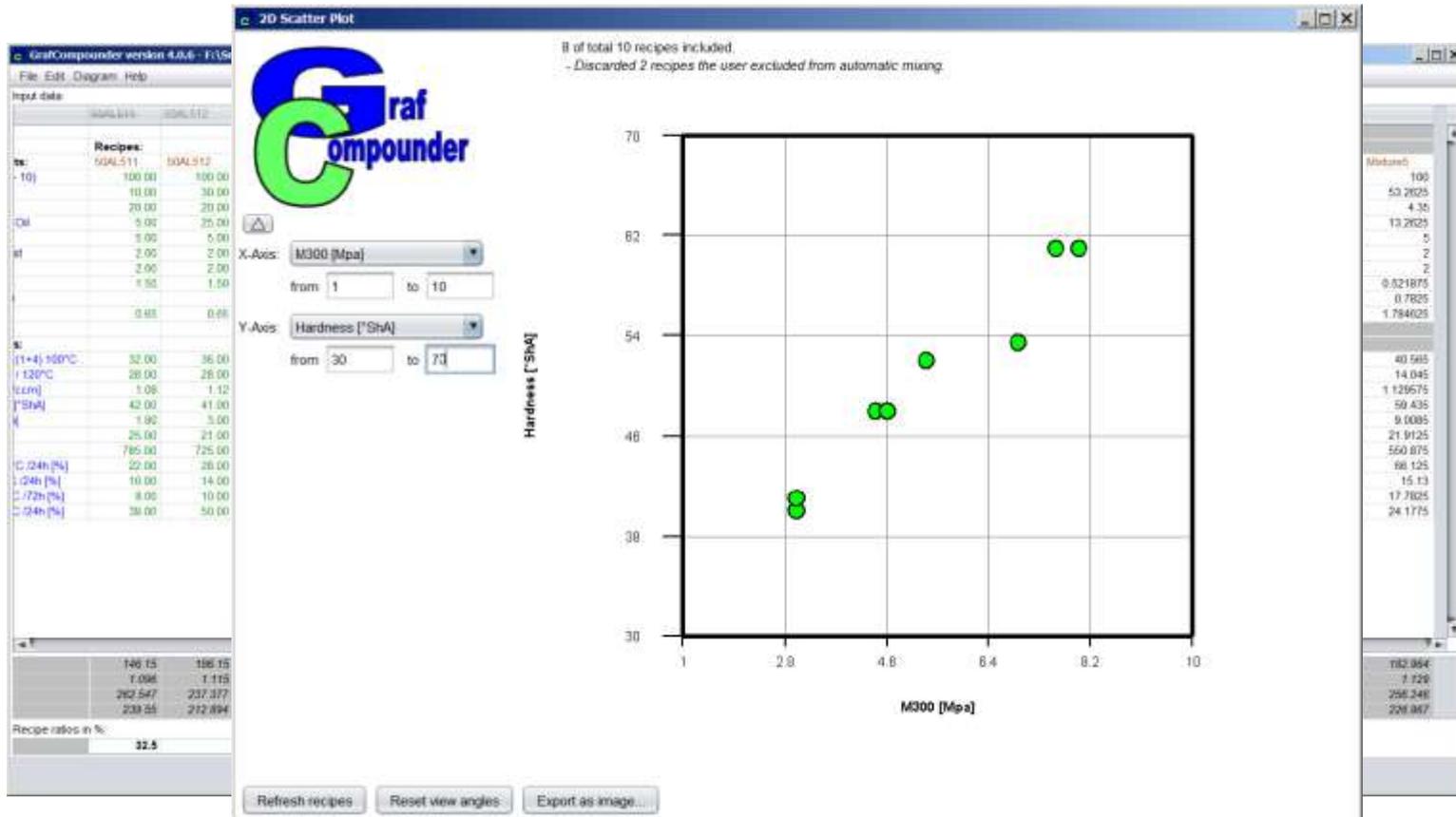
Output

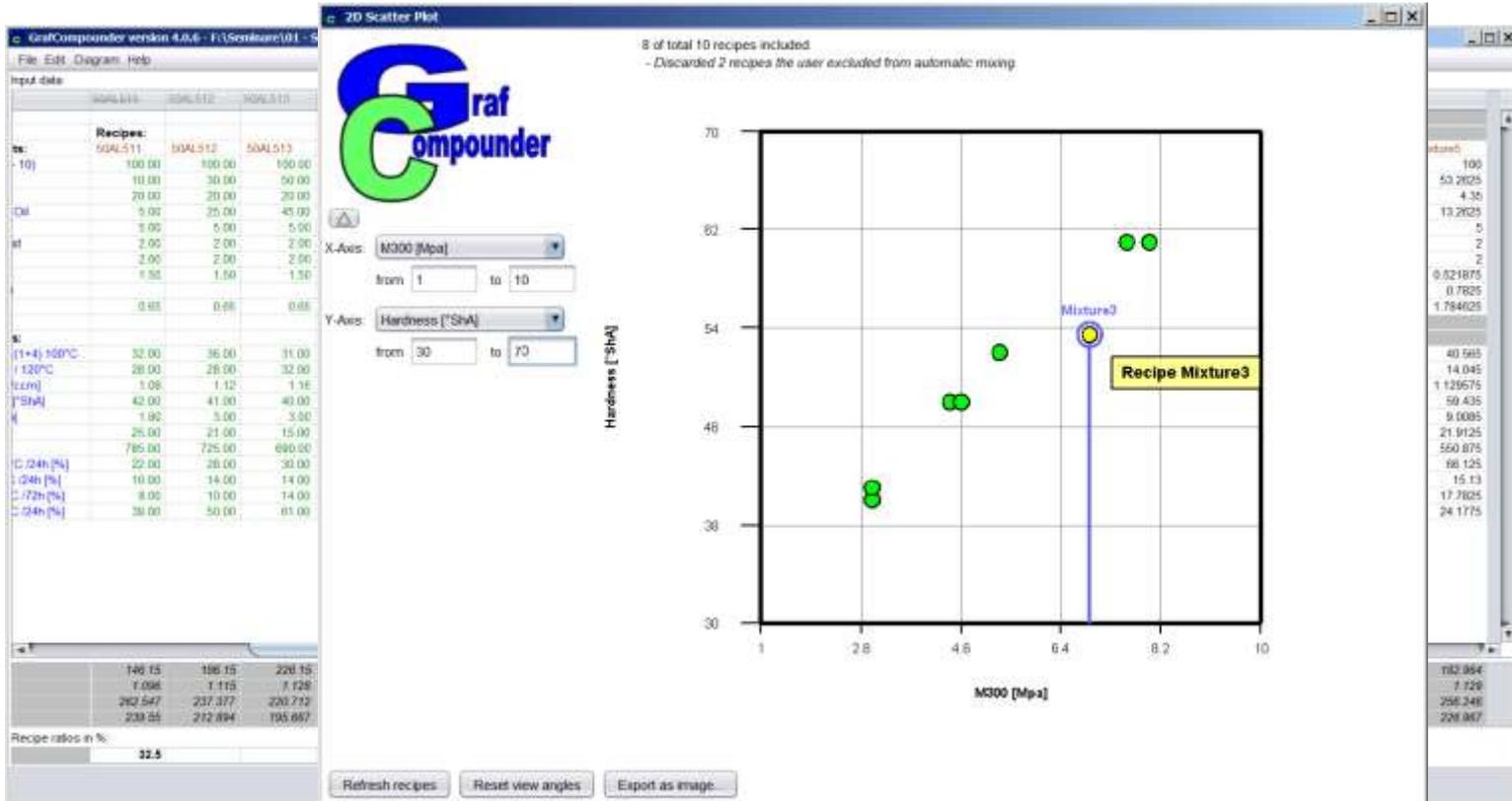
Mixture0	Mixture1	Mixture4	Mixture5
100	100	100	100
35.75	37	37	53.2025
20	6.5	6.5	4.36
5	8.375	8.375	13.2025
5	5	5	5
2	2	2	2
2	2	2	2
1.5	0.6625	0.6625	0.621875
0.65	0.675	0.675	0.7825
0.65	1.62875	1.62875	1.784025
47.975	38.075	38.075	40.565
23.7	16.525	16.525	14.045
1.16225	1.10025	1.10025	1.129575
54.9875	53.475	53.475	50.435
6.335	6.93	6.93	9.0085
23.925	23.65	23.65	21.9125
631.6875	619.625	619.625	550.875
21.45	59.125	59.125	66.125
10.6875	14.95	14.95	15.13
9.5375	14.75	14.75	17.7025
44	24.15	24.15	24.1775

Sum of recipe ratios (should be 100%)

100

Make new "Auto mix (new mixture)"





2D Scatter Plot; Refresh recipes and identify position of “Mixture 3”

GrafCompounder version 4.0.0 - F:\Software\01 - Seminars\Course 2022\CSMO Seminars CAN (Quadco)\Presentation\CSMO 22\Day one\18 CSMO Dess Data (Advanced).xls

File Edit Diagram Help

Input data

	SMAL11	SGAL12	SHAL13	SHAL14	SHAL15	SHAL16	SHAL17	SHAL18	SHAL19
Recipe:									
100	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
20	10.00	30.00	30.00	25.00	45.00	75.00	45.00	65.00	50.00
30	20.00	30.00	30.00	20.00	30.00	20.00	20.00	20.00	20.00
40	5.00	25.00	45.00	1.00	25.00	45.00	5.00	25.00	10.00
50	5.00	1.00	0.00	1.00	0.00	0.00	5.00	0.00	5.00
60	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
70	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
80	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	0.25
90	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	1.00
100	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	2.10
110									
120									
130									
140									
150									
160									
170									
180									
190									
200									
210									
220									
230									
240									
250									
260									
270									
280									
290									
300									
310									
320									
330									
340									
350									
360									
370									
380									
390									
400									
410									
420									
430									
440									
450									
460									
470									
480									
490									
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700									
710									
720									
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760									
770									
780									
790									
800									
810									
820									
830									
840									
850									
860									
870									
880									
890									
900									
910									
920									
930									
940									
950									
960									
970									
980									
990									
1000									

Criteria

Name	Min	Max	From	To	Weight	Total
ARI (SMR - 10)	100	100				
AG30	20	20				
CaCO3	20	20				
Naproxen Gel	5	45				
ZnO	0	0				
Stearic Acid	2	2				
HPPO	2	2				
IS	1.5	1.5				
TMFD - 80	0	0				
GBS - 80	0.65	0.65				
MooonyAL(2+4)	35	60				
Mooony H7	20	32				
Density (g/cm3)	1.12	1.2				
Hardness (SBA)	40	61	55	55		
M300 (Max)	3	8				
TS (Max)	75	25	25			
EB (%)	980	725				
C-Set 20°C	17	20			20	100
C-Set 0°C/24h	8	16			10	16.00
C-Set 23°C/72h	8	12			10	16.00
C-Set 70°C/24h	44	61			20	50

Output

Mixture1	Mixture2	Mixture3
47.975	38.075	80.565
23.7	16.025	14.040
1.16225	1.10225	1.129575
54.9075	63.475	59.455
6.355	6.90	8.0065
23.825	23.85	21.9125
631.6675	616.625	560.075
23.45	58.125	60.125
10.6875	14.05	15.13
9.5375	14.75	17.7825
44	24.15	24.1775

Sum of recipe ratios (should be 100%): 100

Number format: 12345.67

Import input data from clipboard | Auto mix (overwrite mixture) | Auto mix (new mixture)

Alternative “append empty column” and “copy mixture column to clipboard”

GraCompounder version 4.0.0 - 1:\Seminar\9) - Seminar\Course 2022\CSMO Seminars CAN-Quarter\Presentations\CSMO 22\Day one\18 CSMO Demo Data (Advanced).gr
 File Edit Diagram Help

Input data

	SOALS11	SOALS12	SOALS13	SOALS14	SOALS15	SOALS16	SOALS17	SOALS18	SOALS19
10)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
0)	10.00	30.00	50.00	25.00	45.00	75.00	45.00	65.00	50.00
20)	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
0)	5.00	25.00	45.00	5.00	25.00	45.00	5.00	25.00	10.00
5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	0.25
									1.00
	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	2.10
(1+4) 100°C	32.00	36.00	31.00	34.00	30.00	42.00	60.00	39.00	41.00
(120°C	28.00	28.00	31.00	28.00	33.00	27.00	30.00	25.00	11.00
[cm]	1.00	1.12	1.18	1.13	1.18	1.19	1.19	1.20	1.11
[SMA]	42.00	41.00	40.00	48.00	48.00	52.00	81.00	81.00	59.00
1	1.80	3.00	3.00	4.40	4.60	5.30	8.00	7.80	9.40
25.00	21.00	15.00	25.00	20.00	15.00	33.00	18.00	23.00	23.00
795.00	725.00	890.00	715.00	705.00	815.00	560.00	590.00	540.00	
22.00	26.00	30.00	17.00	19.00	35.00	39.00	27.00	77.00	
10.00	14.00	14.00	8.00	12.00	16.00	13.00	12.00	16.00	
8.00	10.00	14.00	9.00	13.00	16.00	10.00	17.00	16.00	
39.00	50.00	61.00	44.00	50.00	54.00	44.00	50.00	17.00	

Criteria

Name	Min	Max	From	To	Weight	Toloff
CBS:80	0.65	0.65				
Mooney(I+4)	30	60				
Mooney I5.7	20	32				
Density (g/cm ³)	1.12	1.2				
Hardness (ShA)	40	87	55	55		
M300 (Mw)	3	8				
T3 (Mw)	15	25	25			
EB (%)	860	725		600		
C-Ref:28°C	17	35		20	100	
C-Ref:20°C:24h	8	16		10		
C-Ref:22°C:22h	8	17		10		
C-Ref:20°C:24h	44	82		20	50	50

Output

Mixture1	Mixture2	Mixture3
100	100	100
36.75	37	53.2025
20	0.5	4.30
5	8.375	13.2025
5	5	5
2	2	2
2	2	2
1.5	0.65625	0.521875
	0.675	0.7825
0.65	1.62875	1.78625
47.375	38.975	40.565
23.7	16.525	14.940
1.16225	1.10025	1.129875
54.9675	53.475	50.435
8.335	6.80	9.9065
23.925	23.65	21.9125
831.6875	819.625	850.875
23.45	19.125	66.125
10.0875	14.00	15.13
8.5375	14.75	17.7625
44	24.15	24.1775

Total ingredients 861.15 251.15
 Density (calc.) 1.115 1.100
 Cost (per mix) 219.72 259.18
 Cost (per mass) 167.63 207.96

Sum of recipe ratios (should be 100%)
 100

Recipe ratios in %
 21.75 78.25

Number format: 12345.62
 Import input data from clipboard Auto mix (overwrite mixture) Auto mix (new mixture)

Right click, "Paste cells here"

GrafCompounder version 4.4.6 - F:\Seminar\01 - Seminars\Course 2022\CSMO Seminars CAN-Qualtec\Presentations\CSMO 22\Day one\LIB CSMO Demo Data (Advanced).g

File Edit Diagram Help

Input data

	SOAL511	SOAL512	SOAL513	SOAL514	SOAL515	SOAL516	SOAL517	SOAL518	SOAL519	Mixture3
Recipe:										
10)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Oil	5.00	25.00	45.00	5.00	25.00	45.00	5.00	25.00	10.00	10.00
ad	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	0.25	0.66
	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	1.00	0.66
									2.70	1.62
11)										
[1+4] 100°C	32.00	36.00	31.50	34.00	30.00	42.00	60.00	39.00	41.00	38.88
[120°C	28.00	29.00	32.00	28.00	32.00	32.00	20.00	25.00	11.00	16.53
[150°C	1.08	1.12	1.10	1.13	1.16	1.19	1.19	1.20	1.15	1.10
[150°C	42.00	41.00	40.00	48.00	48.00	52.00	61.00	61.00	58.00	53.49
	1.80	2.00	3.00	4.40	4.60	5.30	8.00	7.60	9.40	6.92
	25.00	21.00	15.00	25.00	20.00	15.00	23.00	18.00	23.00	23.65
	785.00	725.00	680.00	715.00	705.00	615.00	590.00	590.00	540.00	619.63
C 04h [%]	22.00	29.00	30.00	17.00	19.00	35.00	29.00	27.00	77.00	59.13
C 24h [%]	10.00	14.00	14.00	8.00	12.00	16.00	13.00	12.00	16.00	14.05
C 72h [%]	8.00	10.00	14.00	8.00	13.00	16.00	10.00	17.00	18.00	14.75
C 04h [%]	39.00	50.00	61.00	44.00	50.00	54.00	44.00	50.00	17.00	34.15
	146.75	186.75	226.15	167.15	207.15	251.15	181.15	221.25	172.25	183.85
	1.086	1.115	1.128	1.137	1.147	1.171	1.185	1.188	1.117	1.108
	262.547	237.377	320.719	258.197	235.516	219.724	255.257	234.118	263.577	261.345
	238.55	212.894	185.663	227.957	205.594	187.638	215.488	197.407	227.513	235.708
Recipe ratios in %										
	32.5								67.5	

Criteria

Name	Min	Max	From	To	Weight	Toloff
NR (SMR - 10)	100	100				
N200	25	75				
CaCO3	4.35	20				
Naphtenic CV	5	45				
ZnO	5	5				
Stearic Acid	2	2				
IPPED	2	2				
S	0.5278	1.5				
TMTD - 80	0	0.7825				
CBS - 80	0.65	1.7846				

Output

Mixture2	Mixture3	Mixture5
100	100	100
36.75	37	53.2025
20	8.5	4.56
0	8.375	13.2025
0	5	5
2	2	2
2	2	2
1.5	0.66625	0.521875
	0.875	0.7825
0.65	1.62875	1.78425
47.975	38.075	40.565
23.7	16.525	14.045
1.16225	1.10025	1.129675
54.9875	53.475	59.435
6.335	6.93	9.0085
23.925	23.65	21.9125
631.6875	619.625	550.875
23.45	39.125	66.125
10.6875	14.65	15.13
9.5375	14.75	17.7625
44	34.15	24.1775

Total ingredients: 187.15 257.15
 Density (calc.): 1.106 1.182
 Cost (per unit): 219.73 263.34
 Cost (per mass): 107.63 238.10

Sum of recipe ratios (should be 100%): 100

Number format: 12345.67

Import input data from clipboard | Auto mix (overwrite mixture) | Auto mix (new mixture)

Proceed as shown before

GrafCompouder version 4.0.0 - F:\Seminaire\01 - Seminaire\Course 2022\CSMO Seminaire CAR Quebec\Presentations CSMO 22\My one\18 CSMO Demo Data (Advanced).lgf

File Edit Diagram Help

Input data

	DOALS11	DOALS12	DOALS13	DOALS14	DOALS15	DOALS16	DOALS17	DOALS18	DOALS19	Mixture
100	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
30	10.00	30.00	50.00	25.00	45.00	75.00	45.00	65.00	50.00	37.00
20	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	6.50
10	5.00	25.00	45.00	5.00	25.00	45.00	5.00	25.00	10.00	8.38
5	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
2	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	1.03

Criteria

Name	Min	Max	From	To	Weight	TolDef
NR (SMR - 10)	80	90				
N30	25	75				
CaCO3	4.35	20				
Naphten-CK	5	45				
ZnO	5	5				
Stearic Acid	2	2				
PPD	2	2				
B	0.5210	1.3				
JMTD - 80	0	0.7825				
CBR - 80	0.65	1.7845				

Output

Mixture	Mixture	Mixture
100	100	100
35.75	37	53.2625
20	0.5	4.35
5	8.375	13.2625
5	5	5
2	2	2
2	2	2
1.5	0.65625	0.521875
	0.875	0.7825
0.65	1.62875	1.784625

114) 100°C

	DOALS11	DOALS12	DOALS13	DOALS14	DOALS15	DOALS16	DOALS17	DOALS18	DOALS19	Mixture
114) 100°C	32.00	36.00	51.00	34.00	30.00	42.00	60.00	38.00	41.00	38.08
1120°C	29.00	28.00	32.00	29.00	32.00	22.00	20.00	25.00	11.00	16.53
hcm	1.08	1.12	1.10	1.13	1.10	1.10	1.10	1.20	1.11	1.10
TSMA	42.00	41.50	40.00	48.00	46.00	52.00	61.00	61.00	59.00	53.48
1	1.80	3.00	3.00	4.40	4.60	5.90	8.00	7.60	9.40	6.93
25.00	21.50	15.00	25.00	20.00	15.00	23.00	18.00	23.00	23.00	23.65
785.00	725.00	680.00	715.00	755.00	615.00	565.00	590.00	540.00	619.63	
22.00	28.00	30.00	17.00	16.00	35.00	29.00	27.00	37.00	58.15	
1.24h [%]	10.00	14.50	14.00	8.00	12.00	10.00	13.00	12.00	16.00	14.05
0.72h [%]	6.00	10.00	14.00	6.00	13.00	10.00	10.00	17.00	18.00	14.75
0.24h [%]	38.00	50.00	61.00	44.00	50.00	54.00	44.00	50.00	17.00	24.15

148.75 186.15 226.75 161.15 301.15 257.75 161.15 227.15 172.35 162.85

1.096 1.115 1.128 1.137 1.147 1.177 1.155 1.188 1.177 1.196

262.347 237.377 220.712 268.167 236.816 219.724 268.351 234.718 263.077 263.345

239.55 212.694 196.607 227.957 206.894 187.620 215.496 197.401 237.513 238.106

Recipe ratios in %

	32.5	67.5
148.75	186.15	226.75
161.15	301.15	257.75
161.15	227.15	172.35
162.85		

Number format: 12345.67

Import input data from clipboard

Auto mix (overwrite mixture)

Auto mix (new mixture)

Total ingredients 161.15 257.15

Density (calc.) 1.106 1.188

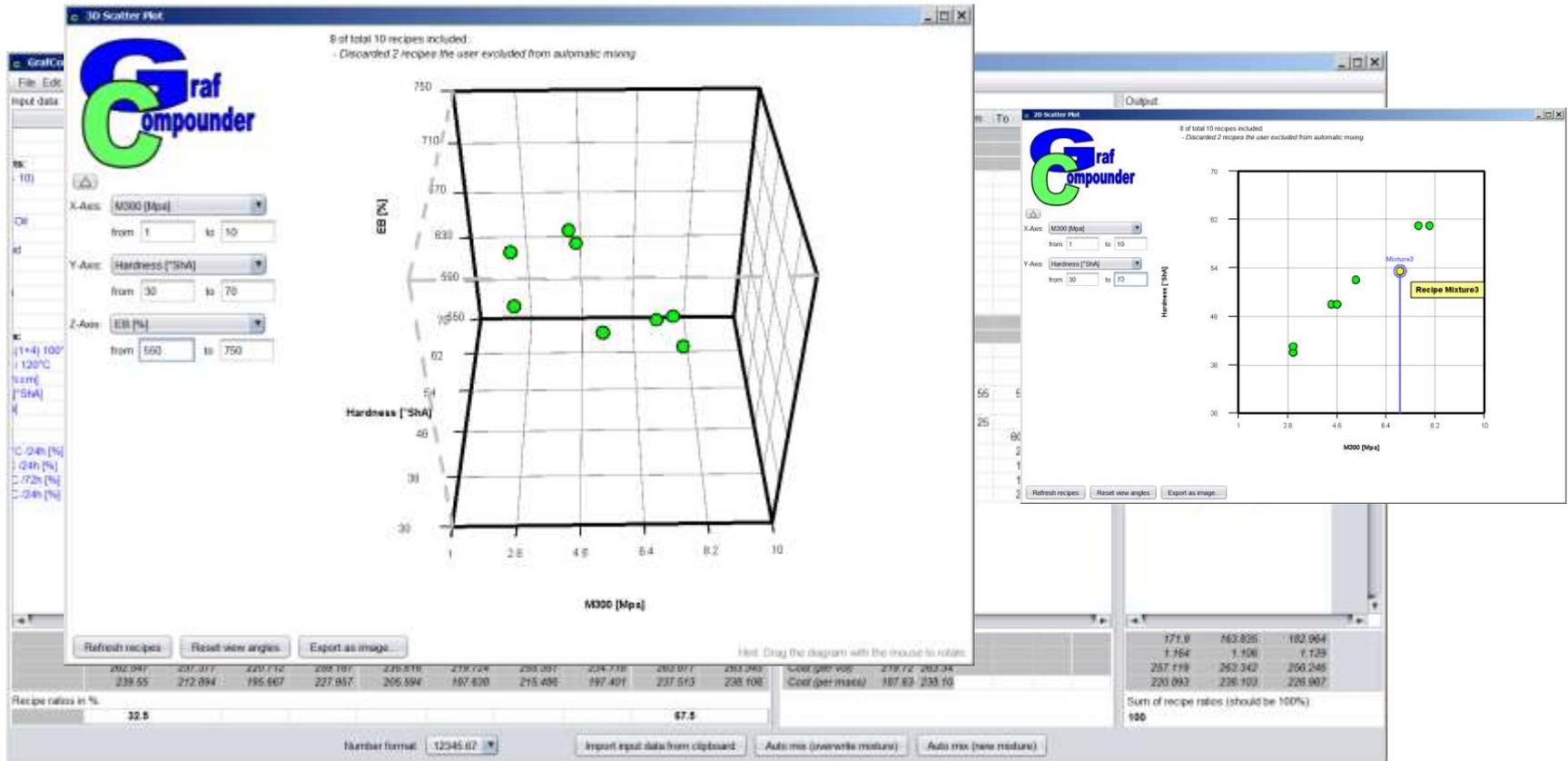
Cost (per vol) 219.72 263.34

Cost (per mass) 107.82 235.10

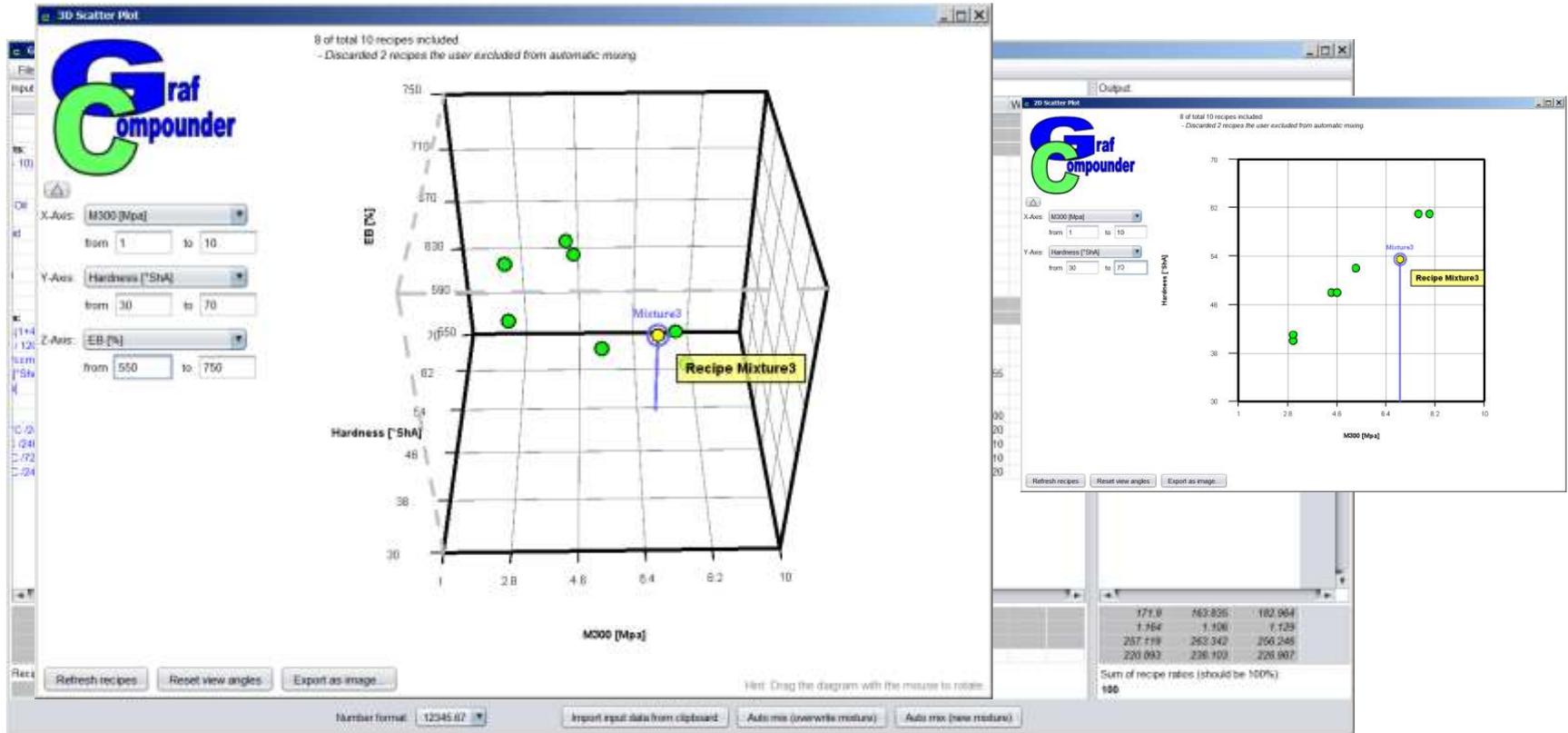
Sum of recipe ratios (should be 100%)

Mixture	Mixture	Mixture
171.0	163.825	162.964
1.164	1.106	1.129
257.119	262.242	256.248
220.093	236.103	226.907

Round values to two decimal places



Select 3D Diagram, add z-axis, eventually reformat axis



Identify calculated Mixture 3 in 3D Diagram

GrafCompounder version 4.0.6 - F:\My GrafCompounder\CMPO_Dataen\tutorial\DATA_2010-02\NR_Data-Calc-Cost (6786) (No.g)

File Edit Diagram Help

Input data

				SCALE11	SCALE22	SCALE33	SCALE44	SCALE55	SCALE
A003	250.00	0.92	SMR CV60						
A004	310.00	0.92	SMR L						
B001	115.00	1.80	N300	10.00	30.00	50.00	25.00	45.00	
B004	115.00	1.80	N306						
B005	115.00	1.80	N550						
B006	115	1.8	N660						
B007	115.00	1.80	N762						
C010	24.00	2.71	CaCO3	20.00	20.00	20.00	20.00	20.00	
D002	116.00	0.89	Naphthenic Oil	0.00	25.00	45.00	5.00	25.00	
D001	120.00	0.90	Paraffinic Oil						
E001	385.00	5.00	ZnO	5.00	5.00	5.00	5.00	5.00	
E021	150.00	1.80	Zn-2EW						
F001	160.00	0.92	Stearic Acid	2.00	2.00	2.00	2.00	2.00	
F101	130.00	0.90	Paraffin Wax						
G001	924.00	1.15	TMQ						
G001	924.00	1.15	IPPO	2.00	2.00	2.00	2.00	2.00	
H001	158.00	1.80	S-80	1.80	1.80	1.80	1.80	1.80	
H004	420.00	1.28	DPG-80						
H802	360.00	1.28	D7DM-80						
H803			TBTD-80						
K001	396.00	1.11	TMTD-80						
K005	708.00	1.28	CBS-80	0.63	0.63	0.63	0.63	0.63	

Code: PR001 PR002 PR003 PR004 PR005 PR007 PR008 PR009 PR010

Properties: MooneyML(1+4) 100°C 32.00 36.00 31.00 34.00 30.00 Mooney E5 / 120°C 38.00 28.00 33.00 28.00 32.00 MHML 55 13 11.5 18 16 Density 1.08 1.12 1.16 1.13 1.10 Hardness 40.00 41.00 40.00 48.00 40.00 M 100 0.60 0.70 0.70 1.00 0.90 M300 1.80 3.00 3.00 4.40 4.00 TS 25.00 21.00 15.00 25.00 20.00 EB 755.00 725.00 690.00 710.00 705.00 TearTroughModulo 23°C 0.00 7.15 6.60 16.00 25.00

Total ingredients 146.51 186.54 226.51 187.51 201.51
Density (calc.) 1.097 1.116 1.128 1.138 1.145
Cost (per vol) 762.484 237.406 220.591 259.76 235.881 2
Cost (per mass) 239.274 212.729 195.458 227.732 205.454 1

Recipe ratios in %

Criteria

Name	Min	Max	From	To	Weight	TolDiff	Output
SMR CV60	0	100					100
SMR L	0	100					65.025
N300	0	75					
N306	0	40					
N550	0	80					
N660	0	25					
N762	0	85					
CaCO3	0	20					20
Naphthenic Oil	0	45					31.7
Paraffinic Oil	0	70					4
ZnO	0	70					5
Zn-2EW	0	2					
Stearic Acid	0	2					2
Paraffin Wax	0	4					2
TMQ	0	2					
IPPO	2	4					3
S-80	0.21	4.06					1.88
DPG-80	0	0.20					
D7DM-80	0	1.25					
TBTD-80	0	0.8					
TMTD-80	0	1.5					
CBS-80	0	2.63					1.88
MooneyML(1+4)	27	80					35.5
Mooney E5/	8	39					29
MHML	11.0	39					19.66375
Density	1.02	1.25					1.085
Hardness	40	71					60.5
M 100	0.6	2.8					1.23275
M300	1.8	14.2					8.945
TS	75	30					25.25
EB	445	785					542.5
TearTroughMod	3.9	33					29.6675
Total ingredients	132.83	261.51					159.78
Density (calc.)	1.027	1.214					1.096
Cost (per vol)	219.81	208.37					281.238
Cost (per mass)	187.55	201.98					256.604

Sum of recipe ratios (should be 100%): 100

Number format: 32945.67 Import input data from clipboard Auto mix (overwrite mixture) Auto mix (new mixture)

Clear criteria window

File Edit Diagram Help

Input data

	CODE11	SCALE12	QUALITY	QUALITY	SCALE12	SCALE12
A003	290.00	0.92	SMR CV60			
A004	310.00	0.92	SMR L			
B003	115.00	1.80	N330	10.00	30.00	50.00 25.00 40.00
B004	115.00	1.80	N330			
B005	115.00	1.80	N550			
B006	115	1.8	N660			
B007	115.00	1.80	N762			
C010	24.00	2.71	CaCO3	20.00	20.00	20.00 20.00 20.00
D002	110.00	0.89	Naphthalic Oil	5.00	25.00	45.00 5.00 25.00
D001	120.00	0.90	Paraffinic Oil			
E001	385.00	5.80	ZnO	5.00	5.00	5.00 5.00 5.00
E021	150.00	1.80	Zn-ZEH			
F001	905.00	0.92	Stearic Acid	2.00	2.00	2.00 2.00 2.00
F101	130.00	0.90	Paraffin Wax			
G001	924.00	1.15	TMQ			
G001	924.00	1.15	BPBD	2.00	2.00	2.00 2.00 2.00
H001	158.00	1.80	S-80	1.88	1.88	1.88 1.88 1.88
H004	420.00	1.28	DPS-80			
H802	380.00	1.28	DTDM-80			
H803			TBTD-80			
H001	396.00	1.11	TMTD-80			
H005	708.00	1.28	CBS-80	0.03	0.03	0.03 0.03 0.03

Criteria

Name	Min	Max	From	To	Weight	Toloff
SMR CV60	0	100				
SMR L	0	100				
N330	0	70				
N330	0	40				
N550	0	80				
N660	0	25				
N762	0	80				
CaCO3	0	20				
Naphthalic Oil	0	45				
Paraffinic Oil	0	10				
ZnO	0	10				
Zn-ZEH	0	2				
Stearic Acid	0	2				
Paraffin Wax	0	4				
TMQ	-2	4				
BPBD						
S-80	0.31	4.08				
DPS-80	0	0.28				
DTDM-80	0	2.28				
TBTD-80	0	0.8				
TMTD-80	0	1.5				
CBS-80	0	2.03				
Mooney ML(1+4) 100°C	27	80				
Mooney 5/ 120°C	0	20				
MH-ML	71.5	29				
Density	1.02	1.27				
Hardness	40	71				
M 100	0.8	2.8				
M300	1.8	14.2				
FS	15	20				
ER	445	785				
Pgrn/Insset/Med	3.9	33				

Output

Sum of recipe ratios (should be 100%): 0

Number format: 12345.67

Import input data from clipboard

Auto mix (overwrite mixture)

Auto mix (new mixture)

Code: PR001 Mooney ML(1+4) 100°C 32.00 30.00 31.00 34.00 30.00
 PR002 Mooney 5/ 120°C 28.00 30.00 30.00 28.00 30.00
 MH-ML 15 13 11.5 18 16
 PR003 Density 1.08 1.12 1.10 1.13 1.18
 PR004 Hardness 42.00 41.00 40.00 46.00 49.00
 PR005 M 100 0.92 0.70 0.70 1.00 0.90
 PR007 M300 1.90 3.00 3.00 4.40 4.60
 PR008 FS 25.00 21.00 15.00 25.00 20.00
 PR009 ER 785.00 725.00 880.00 715.00 785.00
 PR010 Pgrn/Insset/Med 3.90 7.10 8.60 16.00 25.00

Properties:

Total ingredients 146.51 388.51 228.51 181.51 201.51
 Density (calc.) 1.997 1.116 1.128 1.128 1.148
 Cost per vol 262.494 237.400 220.891 209.16 233.007
 Cost per mass 238.274 212.729 195.899 227.733 205.454

Recipe ratios in %

Clear output window

GrafCompounder version 4.0.6 - F:\My GrafCompounder\OMPO_batch\Tutorial\DATA 2018-02\66 - data-Code Cost Dichte Plug.rtc

File Edit Diagram Help

Clear All Data
Load Demo Data (Simple)
Load Demo Data (Advanced)
Open File
Save As
Merge in Recipes from Clipboard
Merge in Recipes from File
Exit

	RDAL311	RDAL312	RDAL313	RDAL314	RDAL315	RDAL316
CD10	24.00	2.71				
D002	116.00	0.88				
D001	120.00	0.80	10.00	30.00	50.00	25.00
E001	385.00	5.60				45.00
E021	150.00	1.80				
F001	185.00	0.92				
F101	130.00	0.90				
G001	804.00	1.15				
G001	804.00	1.15				
H001	108.00	1.60				
H004	420.00	1.28				
H802	380.00	1.28				
H803						
K001	306.00	1.11				
K005	708.00	1.28				

Code: PR001
PR002
PR003
PR004
PR005
PR007
PR008
PR009
PR010

Properties:
MooneyML(1+4) 100°C
Mooney IS / 120°C
MH-ML
Density
Hardness
M 100
M300
TS
EB
TearTrougher/Wedian 23°C

	RDAL311	RDAL312	RDAL313	RDAL314	RDAL315	RDAL316
Total ingredients	148.51	186.51	226.51	161.51	201.51	201.51
Density (calc.)	1.097	1.118	1.128	1.138	1.148	1.148
Cost (per vol)	262.464	237.408	220.591	259.18	235.951	235.951
Cost (per mass)	239.274	272.729	195.559	227.733	205.454	205.454

Recipe ratios in %

	RDAL311	RDAL312	RDAL313	RDAL314	RDAL315	RDAL316
Total ingredients	148.51	186.51	226.51	161.51	201.51	201.51
Density (calc.)	1.097	1.118	1.128	1.138	1.148	1.148
Cost (per vol)	262.464	237.408	220.591	259.18	235.951	235.951
Cost (per mass)	239.274	272.729	195.559	227.733	205.454	205.454

Criteria

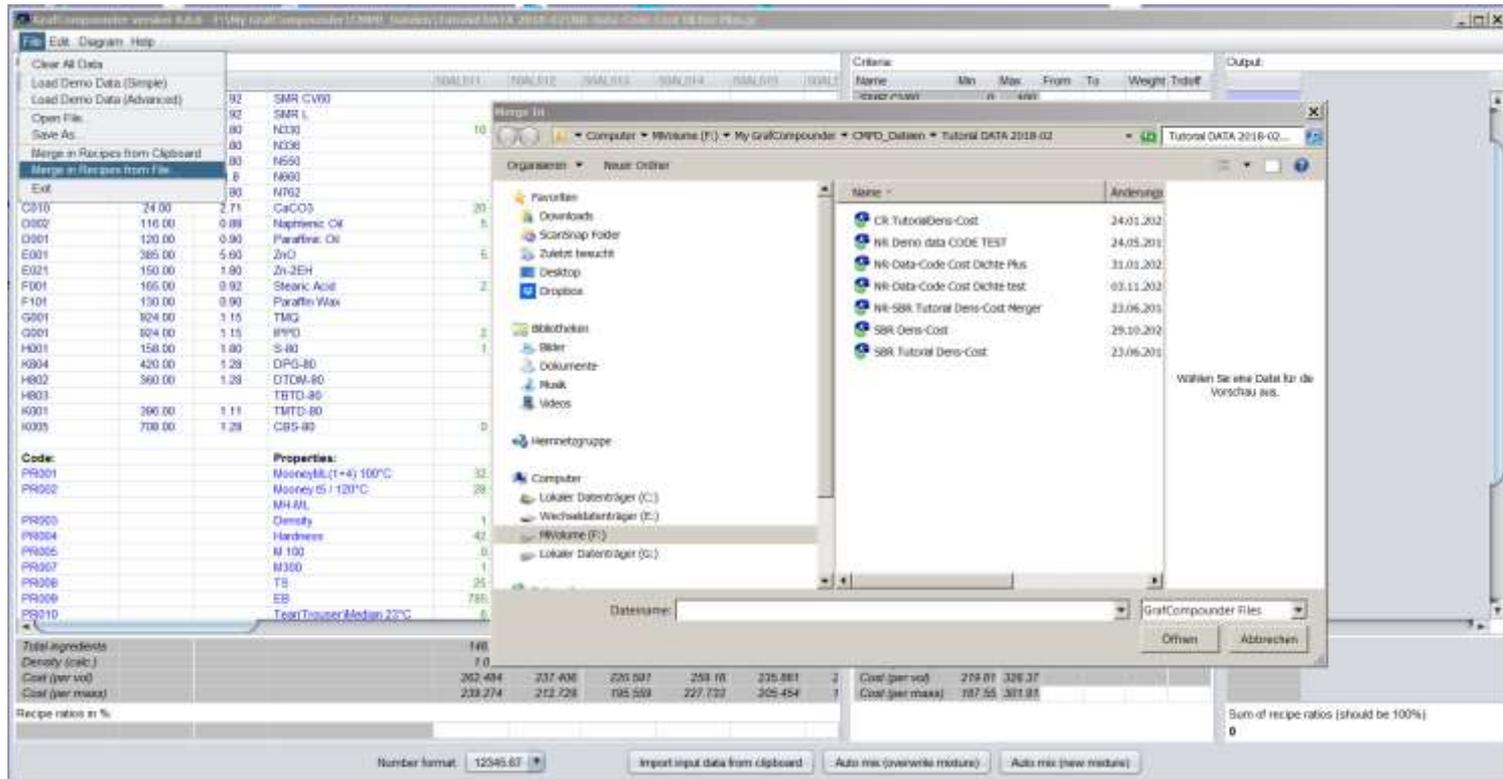
Name	Min	Max	From	To	Weight	Index
SMR CV90	0	100				
SMR L	0	100				
N330	0	75				
N336	0	40				
N550	0	60				
N890	0	25				
N762	0	85				
CaCO3	0	20				
Naphtenic Oil	0	40				
Paraffinic Oil	0	10				
ZnO	0	10				
Zn-2EH	0	2				
Stearic Acid	0	2				
Paraffin Wax	0	4				
TMQ	0	2				
IPPD	2	4				
S-80	0.21	4.06				
DPG-80	0	0.25				
OTDM-80	0	1.25				
TBTD-80	0	0.8				
TMTD-80	0	1.5				
CBS-80	0	2.62				
MooneyML(1+4)	27	80				
Mooney IS /	8	38				
MH-ML	11.5	39				
Density	1.02	1.21				
Hardness	40	71				
M 100	0.0	2.8				
M300	1.8	74.2				
TS	15	20				
EB	445	785				
TearTrougher/Wedian	3.9	33				

Output

Sum of recipe ratios (should be 100%)

Number format: 12345.67 Import input data from clipboard Auto mix (overwrite mixture) Auto mix (new mixture)

Pull down menu, select “Merge Recipes from file”



The screenshot shows the GrafCompounder software interface. On the left, there is a menu with options like 'Clear All Data', 'Load Demo Data (Simple)', 'Open File', 'Save As', 'Merge in Recipes from Clipboard', and 'Exit'. Below the menu is a table of ingredients with columns for 'Code', 'Name', and 'Weight'. The table lists various ingredients such as SMR CV90, SMR L, N2O, N2O2, N2O3, N2O4, N2O5, N2O6, N2O7, CaCO3, Naphtenic Oil, Paraffin Oil, ZnO, Zn-ZEH, Stearic Acid, Paraffin Wax, TMG, MPO, S-80, DPG-80, DTD-80, TBT-80, TMTD-80, and CBS-80. Below the table, there are sections for 'Code' and 'Properties'.

In the center, a 'Merge in' dialog box is open, showing a file explorer view of the 'My GrafCompounder' folder. The 'Dateiname' field is set to 'GrafCompounder Files'. The 'Dateiname' field is empty. The 'Dateiname' field is empty. The 'Dateiname' field is empty.

At the bottom, there is a summary table with columns for 'Total ingredients', 'Density (calc.)', 'Cost (per vol)', and 'Cost (per mass)'. The values are: Total ingredients: 148; Density (calc.): 1.0; Cost (per vol): 362.404; Cost (per mass): 239.274.

Select file for merger

Software interface for GraCompouder showing a list of ingredients and a dialog box for merging recipes.

Merge in Recipes From File

22 recipes have been added.
 24 new ingredient rows have been added.
 2 new property rows have been added.

OK

Input data	00AL011	00AL012	00AL013	00AL014	00AL015	00AL016
A003	290.00	0.92	SMR CV60			
A004	310.00	0.92	SMR L			
B003	115.00	1.80	N330	10.00	30.00	50.00
B004	115.00	1.80	N335			25.00
B005	115.00	1.80	N550			45.00
B006	115.00	1.80	N690			
B007	115.00	1.80	N762			
C010	24.00	2.71	CaCO3	20.00	20.00	20.00
D002	116.00	0.89	Naphthenc. Oil	5.00	25.00	45.00
D001	120.00	0.90	Paraffinic Oil		5.00	25.00
E001	385.00	5.00	ZnO			
E021	150.00	1.80	Zn-2EH			
F001	165.00	0.92	Stearic Acid			
F101	130.00	0.90	Paraffin Wax			
G001	924.00	1.15	TMQ			
G001	924.00	1.15	IPPD			
H001	158.00	1.80	S-80			
K904	420.00	1.28	DPG-80			
H802	360.00	1.28	DTDM-80			
H803			TBTD-80			
K001	386.00	1.11	TMTD-80			
K005	708.00	1.28	CBS-80			
A015	176.00	0.94	SBR 1711 (37.50M-CB)			
A021	200.00	0.92	Buna CB 10			
D003	128.00	0.98	Aromatic Oil			
G002	891.00	1.15	PBN			
K004	772.00	1.24	DPG			
K003	708.00	1.28	CBS			
B001	55.00	1.25	Ground Rubber			
A902	105.00	1.25	Recycled Tread			
G011	579.00	1.33	TMQ			
A019	176.00	1.20	SBR 1843 (150M/100CB)			
C022	125.00	2.00	Silin N			
C021	172.00	2.70	Clay			

Criteria	Name	Min	Max	From	To	Weight, Trdoff
	SMR CV60	0	100			
	SMR L	0	100			
	N330	0	80			
	N335	0	40			
	N550	0	80			
	N690	0	25			
	N762	0	85			
	CaCO3	0	20			
	Naphthenc. Oil	0	45			

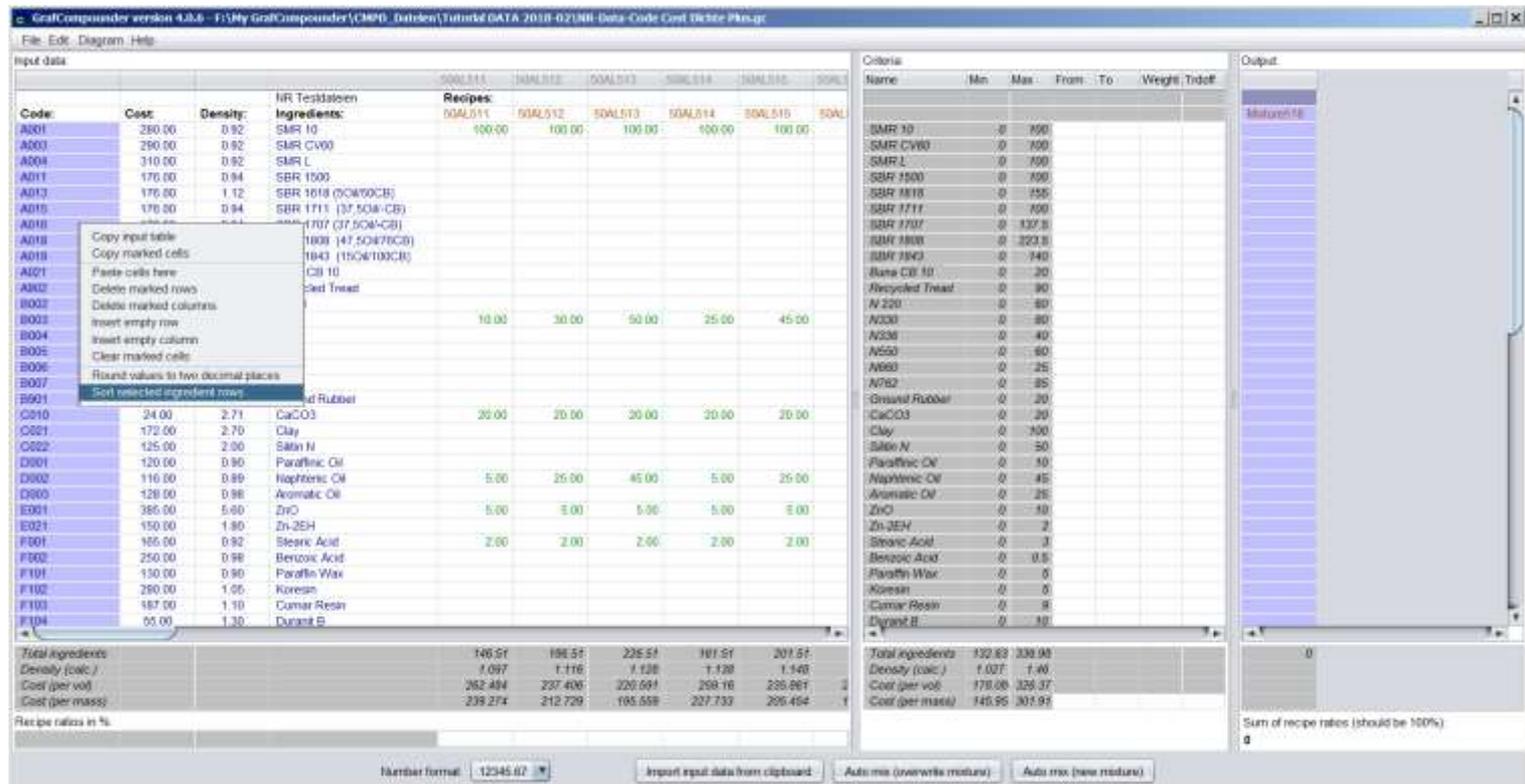
Output	Sum of recipe ratios (should be 100%)
	0

Total ingredients	146.51	198.51	228.51	161.51	201.51
Density (calc.)	1.067	1.118	1.126	1.138	1.146
Cost (per vol)	262.494	237.406	220.591	259.16	235.591
Cost (per mass)	239.274	212.729	195.559	227.733	205.454

Total ingredients	132.63	326.99
Density (calc.)	1.027	1.46
Cost (per vol)	173.08	326.37
Cost (per mass)	145.89	301.95

Number format: 12345.67

Import input data from clipboard | Auto mix (overwrite mixture) | Auto mix (new mixture)



The screenshot displays the GrafCompounder software interface. The main window is titled "GrafCompounder version 4.8.8 - F:\My GrafCompounder\CMFB - Balaban\Tuturk\DATA 2018-02\NB - Data - Code Cost Vector Plugs". The interface is divided into several sections:

- Input data:** A table with columns for Code, Cost, Density, Ingredients, and Recipes (SOAL511 to SOAL515). The 'Code' column is highlighted in blue. A context menu is open over the table, with the option "Sort selected ingredient rows" selected.
- Criteria:** A table with columns for Name, Min, Max, From, To, Weight, and Thoff. It lists various ingredients like SMR 10, SMR CV60, SMR L, SBR 1500, etc.
- Output:** A table with a single column labeled "Mixture".
- Summary:** A section at the bottom left showing "Total ingredients", "Density (calc.)", "Cost (per vol)", and "Cost (per mass)" for the selected rows.
- Buttons:** At the bottom, there are buttons for "Number format", "Import input data from clipboard", "Auto mix (overwrite mixture)", and "Auto mix (new mixture)".

Highlight “Code Column” Select “Sort selected ingredient rows”

GraCompouder version 1.0.6 - F:\My GraCompouder\CMRD_Behrein\Tutorial DATA 2018-02\NB Data-Code Cost Behin Plus.gr

File Edit Diagram Help

Input data:

Code	Cost	Density	HR Testdoelen	Recipe	50AL511	50AL512	50AL513	50AL514	50AL515	50AL
A001	290.00	0.92	SBR 10	100.00	100.00	100.00	100.00	100.00	100.00	
A003	290.00	0.92	SBR CV60							
A004	310.00	0.92	SBR L							
A011	175.00	0.94	SBR 1500							
A012	175.00	1.12	SBR 1018 (50A50CB)							
A015	175.00	0.94	SBR 1711 (37.50A-CB)							
A016	175.00	0.94	SBR 1707 (37.50A-CB)							
A018	175.00	1.14	SBR 1808 (47.50A/90CB)							
A019	175.00	1.20	SBR 1841 (1150A/90CB)							
A021	200.00	0.92	Buna CB 10							
A022	105.00	1.25	Recycled Tread							
B002	115.00	1.80	N 220							
B003	115.00	1.80	N330	10.00	30.00	50.00	25.00	45.00		
B004	115.00	1.80	N330							
B005	115.00	1.80	N500							
B006	115	1.8	N600							
B007	115.00	1.80	N702							
B001	55.00	1.25	Ground Rubber							
C010	24.00	2.71	CaCO3	20.00	20.00	20.00	20.00	20.00		
C021	172.00	2.70	Clay							
C022	125.00	2.00	Silica N							
D001	120.00	0.95	Paraffinic Oil							
D002	115.00	0.95	Naphthenic Oil	5.00	25.00	45.00	5.00	25.00		
D003	128.00	0.95	Aromatic Oil							
E001	385.00	5.00	ZnO	5.00	5.00	5.00	5.00	5.00		
E021	150.00	1.80	Zn-2EH							
F001	105.00	0.92	Stearic Acid	2.00	2.00	2.00	2.00	2.00		
F002	250.00	0.98	Benzoic Acid							
F101	130.00	0.90	Paraffin Wax							
F102	290.00	1.05	Kovasin							
F103	187.00	1.10	Cumar Resin							
F104	55.00	1.10	Distard B							

Recipe ratios in %

	50AL511	50AL512	50AL513	50AL514	50AL515	50AL
Total ingredients	145.51	195.91	226.51	161.51	207.51	
Density (calc.)	1.007	1.116	1.126	1.138	1.148	
Cost (per vol)	262.494	237.406	220.581	359.76	235.861	
Cost (per mass)	239.274	212.729	195.059	227.733	205.454	

Number format: 12345.67

Buttons: Import input data from clipboard, Auto mix (overwrite mixture), Auto mix (new mixture)

Orders:

Name	Min	Max	From	To	Weight Total
SBR 10	0	100			
SBR CV60	0	100			
SBR L	0	100			
SBR 1500	0	100			
SBR 1018	0	155			
SBR 1711	0	100			
SBR 1707	0	117.5			
SBR 1808	0	223.5			
SBR 1841	0	140			
Buna CB 10	0	20			
Recycled Tread	0	90			
N 220	0	60			
N330	0	60			
N500	0	40			
N600	0	60			
N702	0	25			
N702	0	85			
Ground Rubber	0	20			
CaCO3	0	20			
Clay	0	100			
Silica N	0	50			
Paraffinic Oil	0	10			
Naphthenic Oil	0	45			
Aromatic Oil	0	25			
ZnO	0	10			
Zn-2EH	0	2			
Stearic Acid	0	2			
Benzoic Acid	0	0.5			
Paraffin Wax	0	5			
Kovasin	0	5			
Cumar Resin	0	8			
Distard B	0	10			

Output:

Mixture 10

Sum of recipe ratios (should be 100%): 0

Evaluate Result

➤ **Concluding Remarks**

- **NR Compound Database from Literature**
(The Natural Rubber Formulary and Property Index)
- **SBR compounds from different sources**
 - **All compounds based on none polar polymers: NR or NR in blend**
 - **Compounds with a variety of Fillers at different Loadings**
 - **Different Accelerator Systems**
- **Database consists of 33 NR / 22 SBR compound datasets with Formula and Property Data**



→ Release of the „GrafCompounder“ Version 4.0
released June 2021

→ Upgrades from earlier versions available

Thank you for joining this presentation.

Questions, Remarks, Discussion ?

More information under: www.grafcompounder.com