SDK-7
Since 1990

Top Quality, Top Price, Top Trust

With 3-Top spirits we will reach the target and do our best to open the Noble Land Mark in the chemical world.

PU FOAM

Special Additives & Chemicals

SD KOREA
www.sd-korea.com

Top Quality Top Price Top Trust

More than your Imagination

SD KOREA was established in 1990.
We are continuing to develop new products and support our customers with 3-Top spirits.

2025	New Factory for Essential Additive Silicone, Tin, Amine
2021	Visco-Elastic Foam System Mattress, Topper, Pillow, Mat
2020	Silicone & Catalyst Capacity Extension
2019	Korea Global Small Giant Company Award
2017	Silicone Surfactant
2015	Flame Lamination Additive
2012	Catalyst & Processing Additive
2011	Korea Promising Firm Award
2009	Acquired New Technical Patent
2005	Technical Innovation Company Award
2003	FR Agent
1999	PU Liquid Colorant
1990	SD KOREA Foundation

PU FOAM

- Color & Additive
- Silicone & Catalyst
- Memory Foam System House
- EV Battery Foam System House

PLASTIC

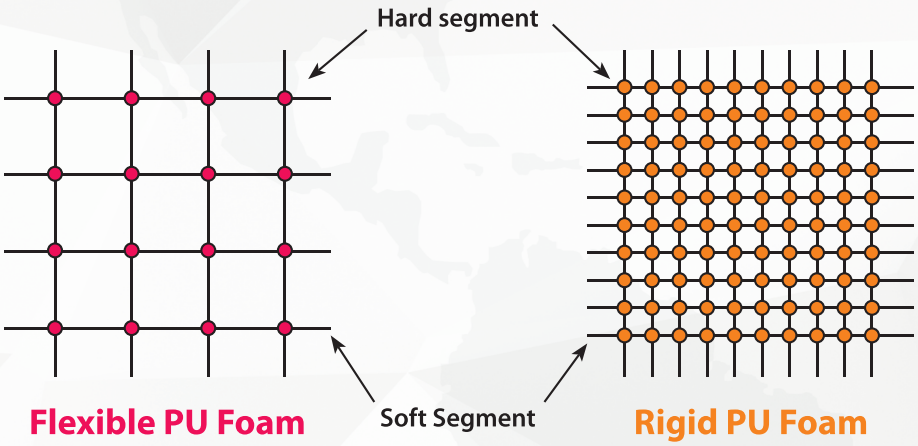
- FR M/B & Compound
- MA Grafting Coupling Agent
- Heat Shrinkable Tube Compound
- Hot Melt Adhesive (HMA)

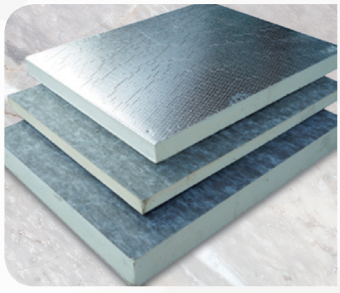
Introduction

PU FOAM

Special Additive & Chemicals

- **Flexible Foam**
  - General Foam
  - FR Foam
  - HR Foam
  - Memory Foam
- **Rigid Foam**
  - PUR Foam
  - PIR Foam
    - Spray Foam
    - Board Panel
    - Metal Board Panel
    - Refrigerator Appliance
    - LNG & LPG Ship Insulation






Contents

Flexible Foam

1. Polyether Foam

2. Polyester Foam

Rigid Foam

Plastic

Packing Unit

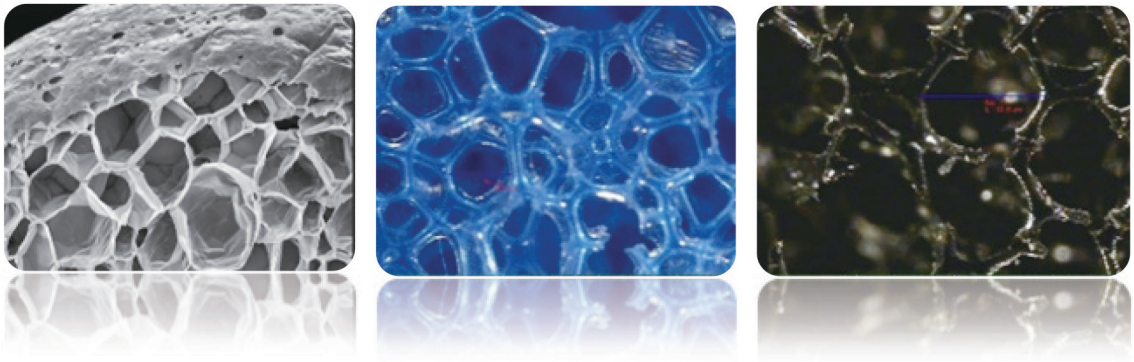
Flexible PU Foam

1. Polyether Foam

Part 1. Silicone

01. Silicone Surfactant

- Control Fine Cell Formation
- Excellent Foam Stabilization
- Broad Processing Latitude
- Avoid Shrinkage / Split



Foam	Grade	Application	Appearance
Flexible	SUSI-1580	All density	liquid
	SUSI-1580L	Less than 15kg	liquid
	SUSI-1580A	High air porosity	liquid
	SUSI-1626	HR Foam, TDI Memory	liquid
	SUSI-1427	MDI Foam	liquid
Rigid	SUSI-1462	All density	liquid

■ Dosage : 0.5 to 3.0 php

Part 2. Catalyst

02. Tin / Amine Catalyst

- Blowing (gas generation) reaction : CO_2 gas generation for open cell
- Gelling (polymerization) reaction : Urethane reaction for close cell

Tin

Tin shortage	Tin excess
Foam split, collapse	More close cell, shrinkage

■ Dosage : 0.1 to 2.0 php

Amine

Amine shortage	Amine excess
Slow CT/RT, less open cell, less air flow	Quick CT/RT, more open cell, foam split

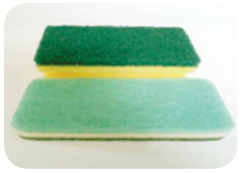
■ Dosage : 0.1 to 0.5 php

Use	Type	Product	Viscosity(cps, 25°C)	Remarks
Flexible Foam	Tin(Sn)	SUT-9	1,000↓	28 ± 0.5 %
	Amine	SUA-33LV	200↓	33 ± 0.5 %
		SUA-1	20↓	70 ± 0.5 %
		SUA-B75	50↓	Mixture
Rigid Foam	Potassium(K)	SUK-15	9,000↓	15.5 ± 0.5 %
		SUT-45	22,000↓	14 ± 0.5 %

Part 3. Bonding Glue

03. Foam Bonding Glue

Physical Properties	Solvent Type		Hot Melt Type(HMA)	
	SBA-523	SBA-530	SBA-570	SBA-573
Viscosity(cps, 25°C)	100↓	6,000↓	-	-
Solid Contents (%)	28 ± 2.0	60 ± 2	-	-
Solvent	EA	EA	NO	NO
Softening Temperature	-	-	85 ~ 90°C	90 ~ 95°C
State of Matter	Liquid	Liquid	Solid	Solid
Coating Method	Spray	Roll coating	Spray	Nozzle

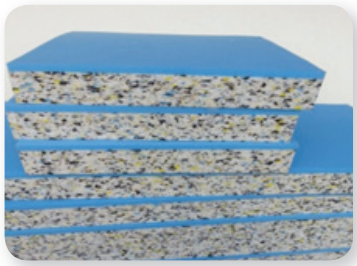
	Product	Main Application
1	SBA-523	 
2	SBA-530	 
3	SBA-570/573	 

04. Re-Bonding Glue

- Steam type : Injection steam 80~100°C / 1 block production time 15~20mins
- Non-steam type : Water, SUT-9, M.C / 1 block production time 60~70mins

Advantage

- Provide excellent adhesion properties with the low dosage
- Save the total production cost by lowering dosage, and shorten the steam time and working time
- No bonding lump inside of re-bonding block



Type	Grade	Physical Properties		
		NCO %	Viscosity,cps	Character
MDI	SMA-635	17.0%	1,000↓	Low hardness
	SMA-635N	19.0%		St. hardness
	SMA-635K	9.5%		Automotive mat

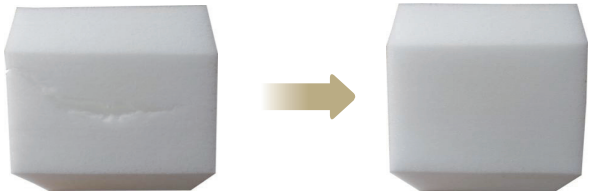
■ Dosage : 8 to 15kg per 100kg Foam Scrap

Part 4. Processing Additive

05. Anti-Splitting Agent

SASP-2012

- High dosage of $CaCO_3$ make urethane structure weak and splitting problem might happen.
- In case of finding more close cell by SASP-2012, it is better to decrease dosage of Tin catalyst.



Physical Properties	SASP-2012
Appearance	Clear Liquid
Viscosity(cps, 25°C)	5,500↓

■ Dosage : 0.5 to 2.0 php

06. Foam Elongator

SPOL-310

- Effective in improving elongation and tear strength.
- Decrease the common polyol dosage as much as using SPOL-310.

Application

- Band of bra string and Tape, Mattress and Sofa, Kitchen cleaning foam

Physical Properties	SPOL-310
Appearance	Clear Liquid
Viscosity(cps, 25°C)	400 ~ 600

■ Dosage : 10.0 to 15.0 php

07. Foam Hardener

SHD-640, SHD-670

- SHD-640 is very useful when increasing foam hardness in low density foam and high dosage $CaCO_3$
- SHD-670 is effective to partially replace about 10~20% dosage of POP polyol.

Application

- Mattress, Sofa, Topper, Cushion

Physical Properties	SHD-640	SHD-670
Appearance	Clear Liquid	Milky liquid
Viscosity(cps, 25°C)	800↓	1,000↓
Applied density	Low density	All density
Dosage (php)	2.0 ~ 5.0	10.0 ~ 20.0

08. Foam Softener

SSF-982

- Make softness and a comfortable feeling.
- 5.0 php dosage is enough to improve softness up to around 30%.

Application

- Mattress, Sofa, Topper, Cushion

Physical Properties	SSF-982
Appearance	Clear Liquid
Viscosity(cps, 25°C)	10↓

■ Dosage : 5.0 to 10.0 php

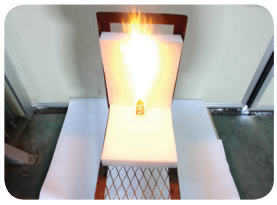
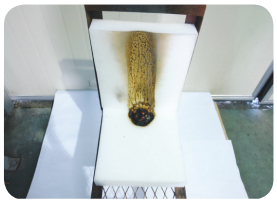
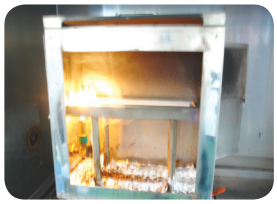
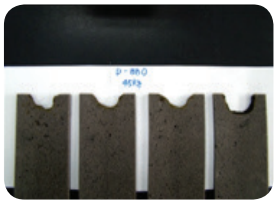
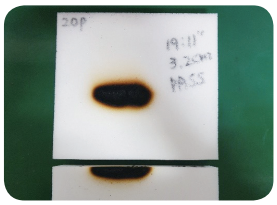
Part 5. FR & Additive

09. Flame Retardant

- SFR-32N : Mattress and furniture foam
- SFR-126 : Automobile and industrial foam
- SFR-NH515 : Non-halogen FR foam

Product	Application	FR regulation	P(%)	Cl(%)
SFR-32N	Mattress, Car	BS-5852, CAL-117	12.0↓	27.0↓
SFR-126	Car, industrial	FMVSS-302	11.0↓	31.0↓
SFR-NH515	Car, Mattress	Non-Halogen FR	9.0↑	-

■ Dosage : 10.0 to 20.0 php

BS5852 crib5 (Mattress in UK)		
FMVSS302 (Automotive)		
CAL-117 (Mattress in US)		

10. Flame Lamination Promotor

- Adhesive promotor between foam and fabric or leather.
- Designed to improve good bonding strength in flame lamination.

	Physical Properties	SLF-506	SLF-522
1	Appearance	Yellowish Liquid	Yellowish Liquid
2	Viscosity (cps, 25°C)	700~1,000	400↓
3	Bonding	Good	Excellent
4	FR	Good	Good
5	Fog Value	Low	Very Low

■ Dosage : 1.0 to 8.0 php

11. Flame Lamination Polyol

- More ffective in using together with SLF-506 or SLF-522.
- Synergistic polyol to greatly improve bonding strength.

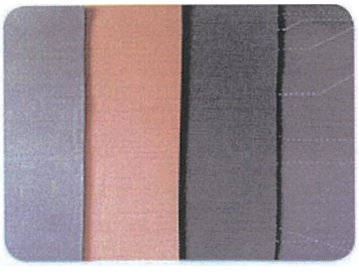
Application

- Flame lamination, Sofa, Car Sheet, Head liner

	Physical Properties	SPOL-245
1	Appearance	Yellowish Liquid
2	Viscosity (cps, 25°C)	3,000↓
3	Specific gravity	1.20 ± 0.03

■ Dosage : 1.0 to 8.0 php

1. SLF-506, 2.0~3.0 php + SPOL-245, 5.0 php
2. SLF-522, 1.0~2.0 php + SPOL-245, 5.0 php



Part 6. Color & Additive

12. SU Liquid Color

- High color strength and low viscosity
- Good dispersion and no flow mark
- Polyol base reactive colorant

1. Polyether Foam Colorant

Color	Grade	Character	Color	Grade	Character
1. Black	SUB-540LV	St. black	4. Red	SUR-570	St. red
	SUB-547LV	Jet		SUR-571	Dark
2. Blue	SUBL-580	St. blue		SUR-575	Light
	SUBL-581	Dark		SUR-576	Pink red
	SUBL-582S	Deep	5. Orange	SUOR-555	St. orange
3. Yellow	SUY-590	St. yellow	6. Green	SUG-520	St. green
	SUY-593	Dark		SUG-521	Dark
	SUY-595	Light		SUG-525	light
7. Violet	SUVI-530P	Economic violet		SUVI-535	St. violet

■ Dosage : 0.5 to 8.0 php

2. Polyester Foam Colorant

Color	Grade	Character
Black	SUB-137LV	St. black
	SUB-138BL	Blueish black
Red	SUR-17	-
Blue	SUBL-18	-
Yellow	SUY-19	-

※To adjust the colorant viscosity, Polyester polyol should be used.

■ Dosage : 0.5 to 8.0 php

3. Shoe Sole Colorant

Color	Grade	Color	Grade
Black	SUB-133N	Red	SUR-174
White	SUW-155S	Blue	SUBL-184
Yellow	SUY-194	Brown	SUBR-215S

■ Dosage : 0.5 to 8.0 php

13. Anti-Discoloring Agent

Application

- Bra-cup
- Shoulder pads
- Shoes PU foam

1. Shoes Foam

Unit: Grey Scale (AATTC / ISO105)

Grade	UV property	Appearance	Brand
SUV-900N	4.0	liquid	NIKE
SUV-5270	4.0	liquid	ADIDAS

Test Condition

SHOES	Nike Spec.	QUV 340 Lamp, 45°C x 24hrs
	Adidas Spec.	QUV : Suntest XLS+, 550 watt, 70°C x 2hrs Hydrolysis : 70°C x 95%(Humidity) x 7days
	Mizuno Spec.	QUV : Suntest XLS+, 70°C x 2hrs Nox(Burn test) 24hrs per cycle

2. Bra-Cup and Should Foam

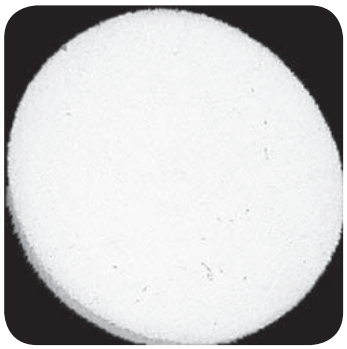
Unit: Grey Scale (AATTC / ISO105)

Grade	Color Consistency (gray scale value)					character
	Molding heat	Indoor (1month)	Burnt Gas (NOx)	Hydrolysis	phenolic	
SUV-611N	4.0	4.0	4.0	3.5	4.0	Standard
SUV-615	4.0	4.0	3.5	4.0	4.0	Good
SUV-810	4.5	4.0	4.0	4.0	4.0	Excellent

Test Condition

BRA-CUP	QUV Test	QUV 340 Lamp, 50°C x 8Hours
	Phenolic Test	Impregnated test paper, 60°C x 16Hours
	Burnt gas test(Nox)	AATCC 23, 24Hours
	Heat Resistance	1 press molding(200°C x 120sec) 2 press molding(200°C x 80sec)+(200°C x 180sec)
	Hydrolysis	70°C x 95%(Humidity) x 7days

■ Dosage : 4.0 to 8.0 php



3. Super White Color

Main application is for more bright white color foam.
In the bra-cup, to improve more white color it is added about 1.0php to bra-cup SUV

Grade	Color	Character
SUV-105	Violet white	Excellent
SUV-106	Blueish white	Specific
SUW-150	White	Economic

14. Anti-Static Agent

Static electricity is generated when the different materials is contacted, rubbed and separated.

It is discharged by using SUAN-807.

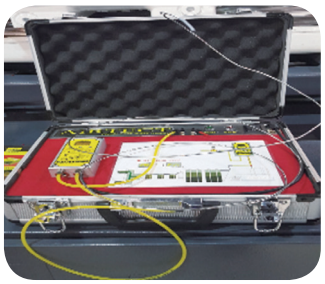
The effect range : $10^{9}\Omega$~$10^{11}\Omega$

Product	Viscosity (cps, 25°C)	Appearance
SUAN - 807	250↓	Clear Liquid

■ Dosage : 2.0 to 3.0 php

Application

- Electric & Electronic packing PU foam
- Filter Foam
- Sealing Foam



Part 7. Anti-Oxidant

15. Anti-Scorching Agent

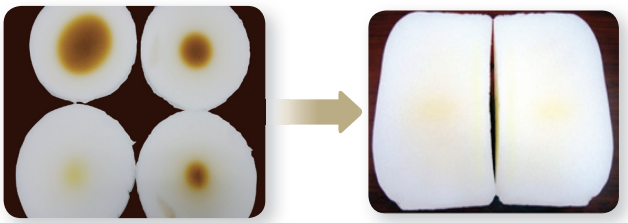
Anti-scorching agent is to prevent the degradation of PU foam at temperature of over 160℃ during manufacturing process.
High temperature and humidity might cause scorching and discoloration problems.

Grade	Appearance	Use
SUSC-800	liquid	TDI Foam
SUSC-820	liquid	MDI Foam

■ Dosage : 0.5 to 2.0 php

Application

- Bright and white color
- Low density foam with high water or FR agent
- High temperature and humidity weather conditions



16. Indoor Color Stabilizer

PU Foam is very weak and sensitive against NOx gas circumstance.
During storage, the surface color is likely to be changed easily.
SUN series can stabilize and inhibit discoloration from the environment.

Application

- SUN-302 : polyether foam
- SUN-305 : polyester foam

■ Dosage : 1.0 to 2.0 php

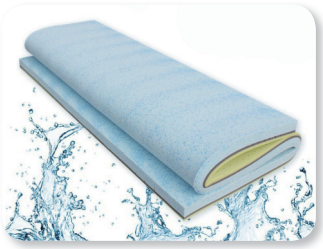
Time of Gas Fume \ Dosage	Blank	SUN, 1.0php	SUN, 1.0php + SUSC, 1.0php
Initial			
2 hours			
4 hours			

Part 8. Visco-Elastic Foam System

17. Mattress & Topper System

Visco-Elastic Foam System consists of Polyol system and ISO system.
Polyol system is classified into 2 series, Slab Foam 'SBS-8050N' and Mold Foam 'SMS-7045N'.
Memory foam system is the customer-oriented product and essential physical properties should be checked ahead.

1. Density
2. Hardness
3. Recovery Time
4. Temperature Sensitivity
5. Cell Openness
6. Surface Softness
7. Surface Stickiness
8. Tear Strength



A. Most Popular System : SBS-6040N / SBS-6050A

	Density	Porosity L/min	Hardness ILD 25%	Recovery Time	Mixing Ratio
1. General Foam					
SBS-6040N	60 ~ 40	0 ~ 5.0	5.0 ± 1.0	1.0 ~ 5.0	100 : 45 ~ 58
2. Air Permeable Foam					
SBS-6050A	50 ±3.0	10 ~ 50	6.0 ± 1.0	5.0 ~10	100 : 45 ~ 47
3 ISO System					
SIS-845	Modified MDI system				

B. Economic Cost System : SBS-50LP

SBS-50LP is called "Economic Cost System" using any kinds of most common polymeric MDI.
P-MDI is lower price and easily purchased than specific MDI.
So that production cost can be decreased and stock inventory can be managed effectively.

- It is specialized for 50kg density foam.
- Other than 50kg density foam, it can be customized as per your request.

C. Specific System for High level country : SBS-V55

it is 55kg density foam at low sea level area.
but in high altitude country over than 1,000m the foam is made to 50kg.
in spite of density difference its quality is almost same and the feeling is very comfortable.
SD Modified MDI, SIS-845, should be used to make it.

Using Method

1. Polyol and Modified MDI system should be stored at 24 ± 2.0℃.
2. Polyol system should be vigorously pre-mixed at least 10 mins in a working tank for fine cell.
3. Pre-mixed polyol system should be mixed about 30 seconds additionally in a foaming head.
4. MDI is added in this stage and should be mixed about 10 second with pre-polyol system.
5. Lastly, It is poured on the foaming box.

18. Pillow System

All density pillow for 45~70kg can be made with only one SMS-7045N.
Mixing ratio(polyol system vs MDI) and overpacking quantity should be followed as below guide.
SMS-7045N system is best choice and economic product.

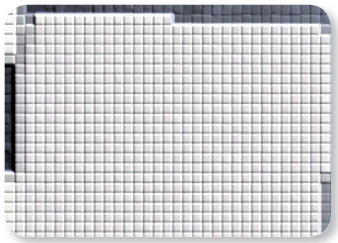
- SMS-7045N

-	Physical Properties	SMS-7045N					
1	Type	Normal Conditions			Modified Conditions		
2	Mixing Ratio	100 : 44 ~ 45			100 : 50 ~ 52		
3	Overpacking (%)	110	120	130	110	120	130
4	Core Density (kg)	60	65	70	45	50	55
5	Pillow Weight (g)	831	904	982	624	680	735
6	Surface/Max Hardness	4.0/15.0	4.4/18.2	4.9/21.3	3.3/14.4	3.3/15.7	4.2/20.2
7	Recovery Time (Sec.)	3.0 ± 1.0			3.5 ± 1.0		
8	Air Permeability	Non-Porosity					

- Foaming Conditions : Mold Temp. 50℃, Demolding Time : 5.0~6.0mins.
- Pillow Size : 45cm x 30cm x Height 8 or 10cm

Application

- Pillow, Neck Pillow, In-sole, Indoor Mat



19. Special Foam System

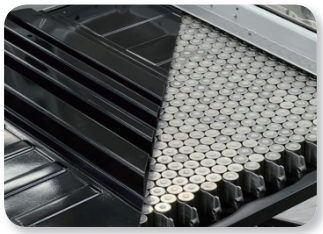
SDK System follow new trend market and satisfy market specific application.
On the future life circumstance, more specific and unique products are required.
According to new energy innovation, electric automotive and appliance is already coming.
EV Battery Encapsulation System is for the use to fix and protect cylinder battery.
High technology Know-How is essential to meet safety against fire,high temperature and electric conductivity.

Character	Grade	Polyol : ISO	Application
HR Foam	SHR-4030	Polyol system	mattress
Shoes Sole Memory Foam	SSS-7080	Polyol system	In-door shoes
EV Battery Encapsulation Foam	SEBS-1350	Polyol system	Electric vehicle

- In-door shoes, Electric vehicle

Remarks

1. Polyol system should be mixed about 10 minute to make homogeneous state
2. Specific mixing ratio and using method should be followed.
3. Also recommended MDI should be used to satisfy the specific application.



2. Polyester Foam

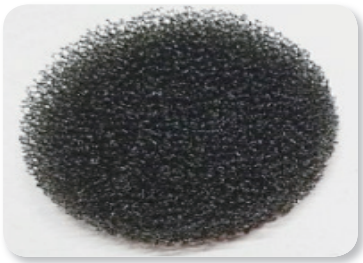
20. Colorant & Additive

- Polyester Additive is suitable for only polyester PU foam
- The Additive is not available for polyether PU foam

Use		Grade	Character
Color	Black	SUB-137LV	St. black
		SUB-138BL	Blueish black
	Red	SUR-17	-
	Blue	SUBL-18	-
	Yellow	SUY-19	-
Anti-Scorching Agent		SUSC-820	-
Anti-Static Agent		SUAN-807	-

Application

- Automotive filter foam, Flexible band, Puff


Rigid Foam

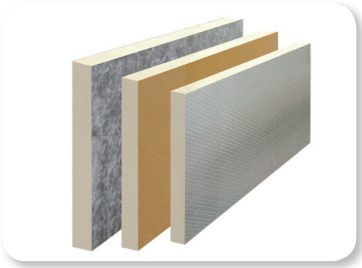
21. Catalyst & Silicone Additive

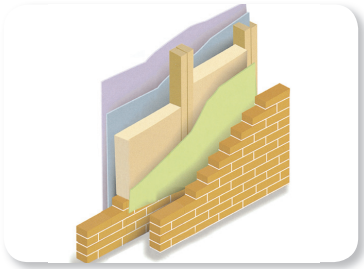
Rigid Foam is chemically classified into PUR and PIR product.
Rigid System Component is divided in polyol system and polymeric MDI.
Important physical property is reactivity and PU liquid flow index, thermal conductivity (insulation property), compressive strength and dimension stability.

Use	Character	Grade
Catalyst	Amine	SUA-33LV
	Potassium (K)	SUK-15
		SUT-45
Color	Black	SUB-400
Anti-Scorching Agent		SUSC-820
Anti-Static Agent		SUAN-807
Silicone		SUSI-1462
Rigid Foam Spray System		SRS-10, 24, 26, 28, 30 (Density)
		Anthane-S, SB : Ultra FR Spray Foam

Application

Construction (Spray Coating, Board Panel, Metal Board), Refrigerator Appliance, LNG merchant ship and others





Plastic

22. Heat Shrinkable Tube Compound

HST Compound and Hot Melt Adhesive(HMA) are the important materials to make several kinds of HST product like single or dual layer and many different sizes of spec.

Main physical function is to improve excellent water and damp proof properties.

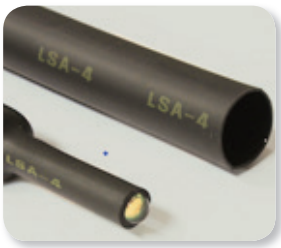
- Out-layer : Radiation & Cross-linked layer with Halogen-free FR in EVA resin
- Inner layer : Hot melt coated layer
- Dual Layer Tube has excellent waterproof and FR property.

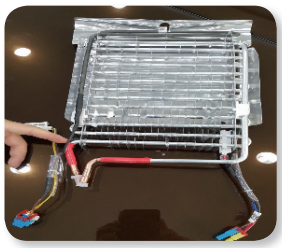
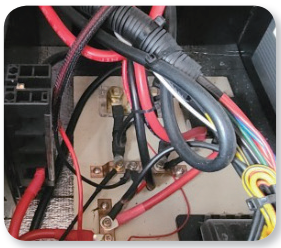
Application

- Wire harness and terminal insulation
- Automotive and electric & electronic assembly parts
- Steel pipe protection parts

Applied Brand

HYUNDAI KIA MOTORS SAMSUNG 삼성전자 LG전자

23. Functional M/B & Compound

Many kinds of functional Additive for plastic extrusion and injection are to improve physical properties on the request of final applications.

Even if a small quantity dosage is applied, it gives better quality improvement and is able to satisfy specific needs. our main plastics are the resin of EVA, LDPE, PP, and PVC

Application

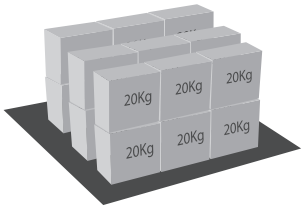
Automotive PP Compound, WPC, PVC and PE Tarpaulin, Film and Sheet, Other Plastics

	Product	Dosage %	Applications
1	SBP-15NSW, 20NS, 20NSW	1.0 ~ 2.0	PP & PE Coupling agent
2	SPE-220FR	10.0~20.0	LDPE Halogen Type FR M/B
3	SBA-2013P	2.0 ~ 3.0	PVC Phthalate Bonding Agent
4	SBA-2023NP	2.0 ~ 3.0	PVC Non-Phthalate Bonding Agent
5	SVD-604	3.0 ~ 5.0	PVC Viscosity Stabilizer
6	SUV-1	2.0 ~ 5.0	UV STABILIZER for Polyurethane
7	UV, Anti-Static, FR, Master Batch & Compound		

Packing Unit

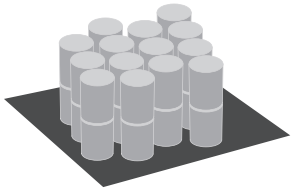
4kg Steel Can

1BOX : 4EA(20kg)

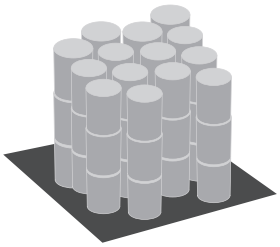


18BOX : 90EA(360kg)

20KG Steel Drum

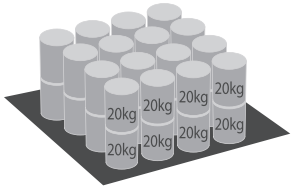


28EA(560kg)

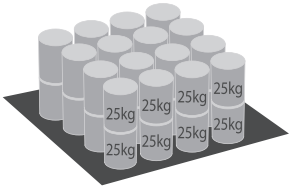


42EA(840kg)

20~25kgkg Steel Drum

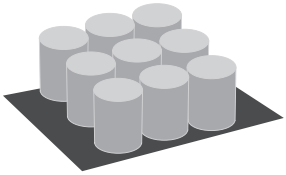


32EA(640kg)

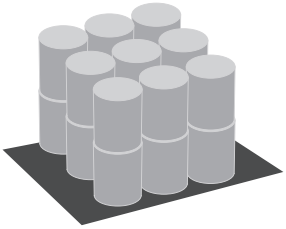


32EA(800kg)

50kg Steel Drum



9EA(450kg)



18EA(900kg)

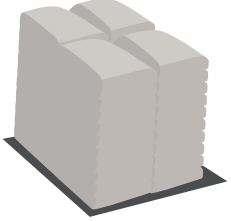
200~230kg Steel Drum

4EA(800kg)

4EA(840kg~880kg)

1,000kg IBC Tank

20kg Paper Bag



40~50EA(800kg~1,000kg)


ALWAYS BE WITH YOU
SD KOREA is doing our best without losing an intention
with customers' first priority.

PU FOAM

Special Additives & Chemicals

SD KOREA

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