

# PHENOL FORMALDEHYDE RESINS



FIRERESISTANT MATERIALS

**RESIN COATED SANDS** 

PLYWOOD AND FIBREBOARDS

**BRAKE BLOCKS** 

**LAMINATES** 

**MINING FOAMS** 

ABRASIVE DISCS

# **MODOFEN® 54S**

DESCRIPTION	PAGE	VERSION	DATE
Modified resol type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Modofen® 54S is used mainly in the production of abrasives and friction linings.

#### PHYSICAL PROPERTIES

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Viscosity at 25 °C	mPas	450-800
3	Density at 25 °C	g/cm³	1,19-1,21
4	Dry matter content	%	73-80
5	pH of aqueous extract	-	7,5-8,5

#### **PACKING**

Modofen® 54S is packed into drums of 200 kg. Containers of smaller quantity are available upon customer's request.

# **STORAGE**

Modofen® 54S must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20 °C. Recommended storage temperature is below 5 °C due to rapid spontaneous increase in the viscosity of resin.

### **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

# WARNING

Information provided in this document applies to the product when stored and used in accordance with the Manufacturer's instructions (set out in Technical Sheets); it has been provided in accordance with the current state of knowledge and in good faith for informational purposes.

# **MODOFEN® AR**

DESCRIPTION	PAGE	VERSION	DATE
Modified resol type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Modofen® AR is used mainly in the production of abrasives and friction linings.

#### PHYSICAL PROPERTIES

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Viscosity at 25°C	mPas	1000-1450
3	Density at 25°C	g/cm³	1,26-1,30
4	Dry matter content	%	at least 72
5	Phenol content	%	up to 16
6	Formaldehyde content	%	up to 0.5
7	Water content	%	5,5-9,0
8	pH of aqueous extract	-	7,5-8,5

# **PACKING**

Modofen® AR is packed into drums of 200 kg and pallet-containers of 1000 kg. Containers of smaller quantity are available upon customer's request.

#### **STORAGE**

Modofen® AR must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20  $^{\circ}$ C. Recommended storage temperature is 5  $^{\circ}$ C.

# **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

# WARNING

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# **MODOFEN® AR 05**

DESCRIPTION	PAGE	VERSION	DATE
Modified resol type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Modofen® AR 05 is used mainly in the production of abrasives and friction linings.

#### PHYSICAL PROPERTIES

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Viscosity at 25 °C	mPas	1000-1450
3	Density at 25 °C	g/cm³	1,26-1,30
4	Dry matter content	%	at least 72
5	Phenol content	%	up to 16
6	Formaldehyde content	%	up to 0.5
7	Water content	%	5,5-9,0
8	pH of aqueous extract	-	5,8-6,8

# **PACKING**

Modofen® AR 05 is packed into hobbocks of 50 kg and drums of 200 kg. Containers of smaller quantity are available upon customer's request.

#### **STORAGE**

Modofen® AR 05 must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20 °C. Recommended storage temperature is 5 °C .

# **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

# WARNING

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# **MODOFEN® KP**

DESCRIPTION	PAGE	VERSION	DATE
Modified resol type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Modofen® KP is used mainly in the production of laminates.

#### **PHYSICAL PROPERTIES**

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Flow time at 20 °C	S	17-20
3	Gelling time at 150°C	S	170-220
4	Dry matter content	%	53-56
5	Phenol content	%	up to 8
6	Formaldehyde content	%	up to 0.95
7	Water tolerance	ml/10g	1-4
8	pH of aqueous extract	-	7,8-8,2

#### **PACKING**

Modofen® KP is packed into drums of 200 kg and pallet-containers of 1000 kg. Containers of smaller quantity are available upon customer's request.

#### **STORAGE**

Modofen® KP must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20 °C. Recommended storage temperature is 5 °C .

### **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

# **WARNING**

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# **MODOFEN® MG**

DESCRIPTION	PAGE	VERSION	DATE
Modified resol type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Modofen® MG is used mainly in the manufacture of foams in the mining industry.

#### **PHYSICAL PROPERTIES**

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Viscosity at 20 °C	mPas	220-350
3	Density at 20 °C	g/cm³	1,15-1,25
4	Non-volatile components content	%	at least 68.0
5	Phenol content	%	up to 6
6	Formaldehyde content	%	up to 0.3

# **PACKING**

Modofen® MG is packed into drums of 200 kg and pallet-containers of 1000 kg. Containers of smaller quantity are available upon customer's request.

#### **STORAGE**

Modofen® MG must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20 °C Recommended storage temperature is 5 °C .

### **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

# **WARNING**

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# **MODOFEN® MG-2**

DESCRIPTION	PAGE	VERSION	DATE
Modified resol type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Modofen® MG-2 is used mainly in the manufacture of foams in the mining industry.

#### **PHYSICAL PROPERTIES**

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Viscosity at 20 °C	mPas	500-900
3	Density at 20°C	g/cm³	1,24-1,26
4	Non-volatile components content	%	at least 74.0
5	Phenol content	%	up to 6
6	Formaldehyde content	%	up to 0.3
7	Water content	%	14,0-18,0
8	pH of aqueous extract	-	7,5-8,2

# **PACKING**

Modofen® MG-2 is packed into drums of 200 kg and pallet-containers of 1000 kg. Containers of smaller quantity are available upon customer's request.

#### **STORAGE**

Modofen $^{\circ}$  MG-2 must be stored in the original sealed packaging, in dry areas at a temperature not exceeding 20  $^{\circ}$ C Recommended storage temperature is 5  $^{\circ}$ C.

### **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

# **WARNING**

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# **MODOFEN® OD**

DESCRIPTION	PAGE	VERSION	DATE
Modified resol type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Modofen® OD is used mainly in foundries in the production of moulds and cores.

#### PHYSICAL PROPERTIES

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Viscosity at 20 °C	mPas	1000-1500
3	Phenol content	%	up to 7
4	Dry matter content	%	73-80
5	Formaldehyde content	%	up to 1

# **PACKING**

Modofen® OD is packed into drums of 200 kg and pallet-containers of 1000 kg. Containers of smaller quantity are available upon customer's request.

#### **STORAGE**

Modofen® OD must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20 °C. Recommended storage temperature is 5 °C .

### **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

# **WARNING**

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# **MODOFEN® T**

DESCRIPTION	PAGE	VERSION	DATE
Modified resol type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Modofen® T is used mainly for bonding waterproof plywood using a method without pre-drying step, and for lignofol and bakelisation of plywood sheets.

# **PHYSICAL PROPERTIES**

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Viscosity at 20 °C	mPas	500-1000
3	Density at 20 °C	g/cm³	1,15-1,25
4	Phenol content	%	up to 0.5
5	Dry matter content	%	49-51
6	Formaldehyde content	%	up to 0.35
7	pH of aqueous extract	-	10,5-11,5

#### **PACKING**

Modofen® T is packed into drums of 200 kg and pallet-containers of 1000 kg. Containers of smaller quantity are available upon customer's request.

#### **STORAGE**

Modofen® T must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20  $^{\circ}$ C. Recommended storage temperature is 5  $^{\circ}$ C.

### **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

# **WARNING**

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# **MODOFEN® TP**

DESCRIPTION	PAGE	VERSION	DATE
Modified resol type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Modofen® TP is used mainly for bonding waterproof plywood using a pre-drying method, and for lignofol and bakelisation of plywood sheets.

# **PHYSICAL PROPERTIES**

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Density at 20 °C	g/cm³	1,15-1,25
3	Phenol content	%	up to 0.5
4	Dry matter content	%	at least 48
5	Formaldehyde content	%	up to 0.3
6	Flow time at 20 °C	S	60-70
7	pH of aqueous extract	-	10,5-11,5

#### **PACKING**

Modofen® TP is packed into drums of 200 kg and pallet-containers of 1000 kg. Containers of smaller quantity are available upon customer's request.

#### **STORAGE**

Modofen® TP must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20 °C. Recommended storage temperature is 5 °C .

### **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

#### WARNING

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# **MODOFEN® XL-1**

DESCRIPTION	PAGE	VERSION	DATE
Modified resol type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Modofen® XL-1 is used mainly in the production of fireproof materials.

# **PHYSICAL PROPERTIES**

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Viscosity at 20 °C	mPas	700 -1200
3	Phenol content	%	up to 5
4	Dry matter content	%	at least 75
5	Formaldehyde content	%	up to 2
6	Flow time at 20 °C	S	120-200
7	pH of aqueous extract	-	7,5-8,5

# **PACKING**

Modofen® XL-1 is packed into drums of 200 kg and pallet-containers of 1000 kg. Containers of smaller quantity are available upon customer's request.

#### **STORAGE**

Modofen® XL-1 must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20  $^{\circ}$ C. Recommended storage temperature is 5  $^{\circ}$ C .

# **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

# WARNING

Information provided in this document applies to the product when stored and used in accordance with the Manufacturer's instructions (set out in Technical Sheets); it has been provided in accordance with the current state of knowledge and in good faith for informational purposes.

# **MODOFEN® XM**

DESCRIPTION	PAGE	VERSION	DATE
Modified resol type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Modofen® XM is used mainly in the production of fireproof materials and haberdashery.

#### **PHYSICAL PROPERTIES**

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Viscosity at 20°C	mPas	-
3	Phenol content	%	up to 5
4	Dry matter content	%	at least 75
5	Formaldehyde content	%	up to 1.2
6	Flow time at 20 °C	S	190-240

# **PACKING**

Modofen® XM is packed into drums of 200 kg and pallet-containers of 1000 kg. Containers of smaller quantity are available upon customer's request.

#### **STORAGE**

Modofen® XM must be stored in the original sealed packaging, in dry areas at a temperature not exceeding 20 °C. Recommended storage temperature is 5 °C.

### **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

#### WARNING

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# **MODOFEN® A-2**

DESCRIPTION	PAGE	VERSION	DATE
Modified resol type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Modofen® A-2 is used mainly in the production of fireproof materials and haberdashery.

#### PHYSICAL PROPERTIES

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Viscosity at 20 °C	mPas	10000-25000
3	Phenol content	%	up to 17
4	Dry matter content	%	at least 75
5	Formaldehyde content	%	up to 2

# **PACKING**

Modofen® A-2 is packed into drums of 200 kg and pallet-containers of 1000 kg. Containers of smaller quantity are available upon customer's request.

#### **STORAGE**

Modofen® A-2 must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20  $^{\circ}$ C. Recommended storage temperature is 5  $^{\circ}$ C.

# **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

#### WARNING

Information provided in this document applies to the product when stored and used in accordance with the Manufacturer's instructions (set out in Technical Sheets); it has been provided in accordance with the current state of knowledge and in good faith for informational purposes.

# **MODOFEN® PGN**

DESCRIPTION	PAGE	VERSION	DATE
Modified resol type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Modofen® PGN is used in the production of mining foams.

#### PHYSICAL PROPERTIES

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Viscosity at 20 °C	mPas	120-180
3	Phenol content	%	up to 6,0
4	Formaldehyde content	%	up to 0,15
5	Non-volatile components content	%	62-66

# **PACKING**

Modofen® PGN is packed into drums of 200 kg and pallet-containers of 1000 kg. Containers of smaller quantity are available upon customer's request.

#### **STORAGE**

Modofen® PGN must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20 °C. Recommended storage temperature is 5 °C.

# **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

# **WARNING**

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# **KKU-2 RESIN**

DESCRIPTION	PAGE	VERSION	DATE
Modified resol type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

KKU-2 resin is used as a binder in foundry and core compounds made of moulding quartz sands or others in the production of castings from all foundry materials.

#### PHYSICAL PROPERTIES

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Viscosity at 20 °C	mPas	150-200
3	Density at 20 °C	g/cm³	1,39-1,41
4	Phenol content	%	up to 0.5

# **PACKING**

KKU-2 resin is packed into drums of 200 kg and pallet-containers of 1000 kg. Containers of smaller quantity are available upon customer's request.

#### **STORAGE**

KKU-2 resin must be stored in the original sealed packaging, in dry areas at a temperature not exceeding 20  $^{\circ}$ C. Recommended storage temperature is 5  $^{\circ}$ C.

# **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

# **WARNING**

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# **NOWOLAK Z**

DESCRIPTION	PAGE	VERSION	DATE
Modified novolac type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Nowolak Z is used mainly in the production of moulding sands used in foundries, in the production of moulding compounds and electro-insulating plates used in electronics, and in the production of varnishes.

#### **PHYSICAL PROPERTIES**

Item no.	Feature	Unit	Value / range
1	Physical state	-	Solid
2	Fluidity at 200 °C	S	up to 100
3	Curing time at 150 °C	S	50-120
4	Melting point	°C	50-63
5	Phenol content	%	up to 5

# **PACKING**

Nowolak Z is packed into drums of 125 kg.

#### **STORAGE**

Nowolak Z must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20 °C.

# **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

# WARNING

Information provided in this document applies to the product when stored and used in accordance with the Manufacturer's instructions (set out in Technical Sheets); it has been provided in accordance with the current state of knowledge and in good faith for informational purposes.

# **NOWOLAK S-120D**

DESCRIPTION	PAGE	VERSION	DATE
Modified novolac type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Nowolak S-120D is used mainly in the manufacture of moulding sands used in foundries.

#### PHYSICAL PROPERTIES

Item no.	Feature	Unit	Value / range
1	Physical state	-	Solid
2	Fluidity at 200 °C	S	20-40
3	Curing time at 150 °C	S	50-70
4	Melting point	°C	65-75
5	Phenol content	%	up to 1

# **PACKING**

Nowolak S-120D is packed into drums of 125 kg and big bags of 500 kg.

#### **STORAGE**

Nowolak S-120D must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20 °C.

# **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

# WARNING

Information provided in this document applies to the product when stored and used in accordance with the Manufacturer's instructions (set out in Technical Sheets); it has been provided in accordance with the current state of knowledge and in good faith for informational purposes.

# **NOWOLAK S-105M**

DESCRIPTION	PAGE	VERSION	DATE
Modified novolac type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Nowolak S-105M is used mainly in the manufacture of moulding sands used in foundries.

#### **PHYSICAL PROPERTIES**

Item no.	Feature	Unit	Value / range
1	Physical state	-	Solid
2	Fluidity at 200 °C	S	up to 60
3	Curing time at 150 °C	S	100-200
4	Melting point	°C	60-70
5	Phenol content	%	up to 1

# **PACKING**

Nowolak S-105M is packed into drums of 125 kg and big bags of 500 kg.

#### **STORAGE**

Nowolak S-105M must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20 °C.

# **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

#### WARNING

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# **NOWOLAK G**

DESCRIPTION	PAGE	VERSION	DATE
Modified novolac type phenol formaldehyde resin	1/1	3	2018-03-26

#### **INTENDED USE**

Nowolak G is used mainly in the production of insulation materials.

#### **PHYSICAL PROPERTIES**

Item no.	Feature	Unit	Value / range
1	Physical state	-	Solid
2	Fluidity at 200 °C	S	up to 150
3	Curing time at 150 °C	S	up to 180
4	Melting point	°C	at least 85

# **PACKING**

Novolak G is packed into drums of 125 kg.

#### **STORAGE**

Nowolak G must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20 °C.

# **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

# **WARNING**

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DESCRIPTION	PAGE	VERSION	DATE
Modified novolac type phenol formaldehyde resin in a solution	1/1	3	2018-03-26

#### **INTENDED USE**

Nowolak MR 40 IA is used mainly in the production of friction materials as an adhesive.

#### **PHYSICAL PROPERTIES**

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Density at 20°C	g/cm³	0,944
3	Viscosity at 20 °C	mPas	approx. 100

# **PACKING**

Nowolak MR 40 IA is packed into canisters of 20 kg and drums of 200 kg.

#### **STORAGE**

Nowolak MR 40 IA must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20 °C.

# **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

#### WARNING

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# **NOWOLAK A 50S-2**

DESCRIPTION	PAGE	VERSION	DATE
Modified novolac type phenol formaldehyde resin in a solution	1/1	3	2018-03-26

#### **INTENDED USE**

Nowolak A 50S-2 is used mainly in the production of laminates.

#### **PHYSICAL PROPERTIES**

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Gelling time at 150 °C	S	up to 120
3	Viscosity at 20 °C	mPas	up to 600
4	Non-volatile components content	%	49-53

# **PACKING**

Nowolak A 50S-2 is packed into canisters of 20 kg and drums of 200 kg.

#### **STORAGE**

Nowolak A 50S-2 must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 20 °C.

# **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

# WARNING

Information provided in this document applies to the product when stored and used in accordance with the Manufacturer's instructions (set out in Technical Sheets); it has been provided in accordance with the current state of knowledge and in good faith for informational purposes.

# **HARDENER KFS 65**

DESCRIPTION	PAGE	VERSION	DATE
Modified novolac type phenol formaldehyde resin in a solution	1/1	3	2018-03-26

#### **INTENDED USE**

Acidic hardener for phenol-formaldehyde resins.

#### **PHYSICAL PROPERTIES**

Item no.	Feature	Unit	Value / range
1	Physical state	-	Liquid
2	Density at 20 °C	g/cm³	1,370-1,385
3	Acid number	mg KOH/g	340-400

# **PACKING**

Hardener KFS 65 is packed into canisters of 29 kg and pallet-containers of 1200 kg.

#### **STORAGE**

Hardener KFS 65 must be stored in the original, sealed packaging, in dry areas at a temperature not exceeding 25 °C.

# **OCCUPATIONAL HEALTH AND SAFETY CONDITIONS**

For detailed information on health, safety, ecology and the toxicological properties of the materials see Safety Data Sheet available upon request.

# **WARNING**

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# SUMMARY OF BASIC PARAMETERS OF PHENOL-FORMALDEHYDE RESINS

Resol type phenol-formalde	Resol type phenol-formaldehyde resins								
Product name	intended use	Viscosity at 20 °C [mPas]	Viscosity at 25 °C [mPas]	Density at 20 °C g/cm³	Density at 25 °C g/cm³	Flow time at 20°C [s]			
Modofen 54S	1; 2		450-800		1,19-1,21				
Modofen AR	1; 2		1000-1450		1,26-1,30				
Modofen AR 05	1; 2		1000-1450		1,26-1,30				
Modofen KP	3	17-20							
Modofen MG	4	220-350		1,15-1,25					
Modofen MG-2	4	500-900		1,24-1,26					
Modofen OD	5	1000-1500							
Modofen T	6	500-1000		1,15-1,25					
Modofen TP	6			1,15-1,25		60-70			
Modofen XL-1	7	700-1200				120-200			
Modofen XM	7; 8					190-240			
Modofen A-2	7; 8	10000-25000							
Modofen® PGN	4	120-180							
KKU-2 resin	5	150-200		1,39-1,41					

Novolac type phenol-formaldehyde resins								
Product name	Intended use	Melting point [°C]	Fluidity at 200°C [s]	Curing time at 150°C [s]	Phenol content [%]			
Nowolak Z	5; 10; 11; 12	50-63	up to 100	50-120	up to 5			
Nowolak S-120D	9	65-75	20-40	50-70	up to 1			
Nowolak S-105M	9	60-70	up to 60	100-200	up to 1			
Nowolak G	( <b>G</b> 13		up to 150	up to 180				
Novolac type phenol-forma	ldehyde resins	s in solutions						
Product name	ict name Intended use		Density at 20°C [g/cm3]	Gelling time at 150°C [s]	Non-volatile components content [%]			
Nowolak MR 40 IA	2	approx. 100	0.944					
Nowolak A 50 S-2	3	up to 600		up to 120	49-53			

Curing time at 150°C [s]	Phenol content [%]	Formaldehyde content [%]	Dry matter content %	pH of aqueous extract	Water tolerance [ml/10g]	Water content [%]	Non-volatile components content [%]
			72-80	7,5-8,5			
	up to 16	up to 0.5	at least 72			5,5-9,0	
	up to 16	up to 0.5	at least 72			5,5-9,0	
170-220	up to 8	up to 0.95	53-56	7,8-8,2	1-4		
	up to 6	up to 0.3					at least 68.0
	up to 6	up to 0.3				14,0-18,0	at least 74.0
	up to 7	up to 1	73-80	6-7			
	up to 0.5	up to 0.35	49-51	10,5-11,5			
	up to 0.5	up to 0.3	at least 48	10,5-11,5			
	up to 5	up to 2	at least 75	7,5-8,5			
	up to 5	up to 1.2	at least 75				
	up to 17	up to 2	at least 75				
	max. 7	max. 0,15	62-66	6-7			
	up to 0.5						

# **KEY**

- Abrasive products
- 2 Friction linings
- 3 Laminates
- 4 Mining foams
- 5 Foundry (moulding compounds)
- 6 Plywood, fibreboards
- 7 Fireproof materials
- 8 Haberdashery
- 9 Resin-coated sands
- 10 Varnishes
- 11 Moulding materials
- 12 Electro-insulating plates
- 13 Insulation materials

/ 23 / / 24 /

# CONTACT



# Gerard Przychodzeń

Sales Director

Gerard.Przychodzen@ciechgroup.com

Tel.: +48669600050

**EMEA** 

# Jan Strzałkowski

Business Development Manager Jan.Strzalkowski@ciechgroup.com

Tel.: +48500213965

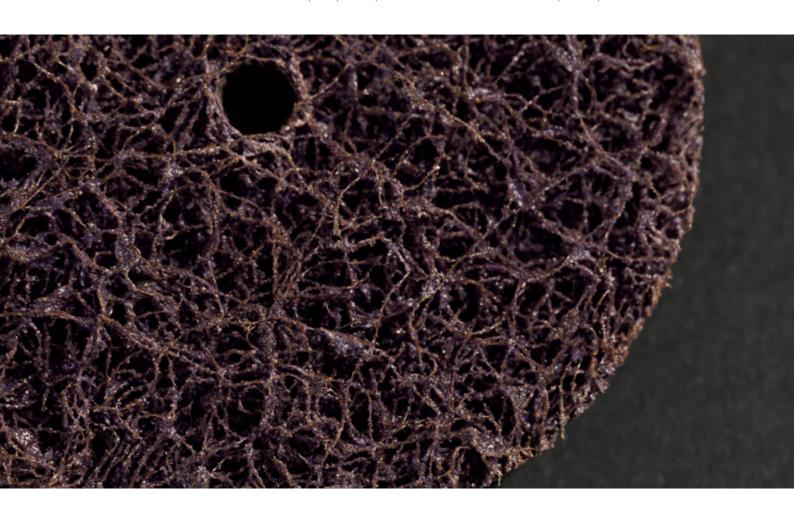
GREAT BRITAIN | IRELAND | BENELUX SPAIN | PORTUGAL | USA | CANADA UAE | ASIA | ISRAEL | AFRICA

# Szymon Szpak

Business Development Manager Szymon.Szpak@ciechgroup.com

Tel.: +48609125507

CZECH REPUBLIC | SLOVAKIA | SLOVENIA HUNGARY | GREECE | TURKEY CROATIA | SERBIA | MACEDONIA



# **Damian Halasa**

Technical Sales Manager

Damian.Halasa@ciechgroup.com

Tel.: +48669600233

POLAND

# Rajmund Plawgo

Sales Manager

Rajmund.Plawgo@ciechgroup.com

Tel.: +4815233716750

GERMANY | AUSTRIA

# Arletta Wrona

Key Account Manager

Arletta.Wrona@ciechgroup.com

Tel.: +48667770377

ITALY | SWITZERLAND | FINLAND SWEDEN | NORWAY | DENMARK

# **Helena Siwek**

Sales Manager

Helena.Siwek@ciechgroup.com

Tel.: +48669606369

RUSSIA | LITHUANIA | LATVIA ESTONIA | KAZAKHSTAN

www.ciechzywice.pl

# Florin Dinu

Product Development Manager

Florin.Dinu@ciechgroup.com

Tel.: +40759041056

ROMANIA | BULGARIA

# Yuriy Dolgykh

Sales Manager

Yuriy.Dolgykh@ciechgroup.com

Tel.: +380956484047

UKRAINE | BELARUS