

MARKEZ® Z1400 is one of the most thermally resilient FFKM compounds currently available on the market. Markez Z1400 exhibits a combination of fantastic chemical resistance, extremely low compression set over time, and a best in class high heat resistance of 335°C (635°F). Used as a cost-effective alternative to K7075 in countless applications across various industries.

ABOUT MARKEZ® #Z1400

MARKEZ® Z1400 is a top of the line material designed for a wide variety of applications.

- Cost effective
- Nearly universal chemical compatibility
- Extremely low compression set
- Good dynamic properties - Long service life

Commonly used in the chemical industry, lab instrumentation, and semiconductor applications.

APPLICATION EXAMPLES

MARKEZ® Z1400 has almost universal chemical compatibility.

- Inorganic & Organic Acids & Alkine
- Ketones, Esters, Ethers, Aldehydes
- Chemicals relavent to Petro-Chem equipment,
Sour gas
- Solvents
 - Acetone, Heptane
 - Glycol ethers, Naphtha
 - Toluene, Turpentine
 - White spirit, Xylene
 - Methyl ethyl ketone (MEK)
 - Dimethylformamide (DMF)

APPLICATION EXAMPLES

- Chem sprayers, injectors and reactors
- Liquid chromatography equipment
- Aerospace Fuels, Skydrol & Oils
- Semiconductor Applications
 - Dry etch, Strip, LPCVD, Litho/Track, ECP, Exhaust valves

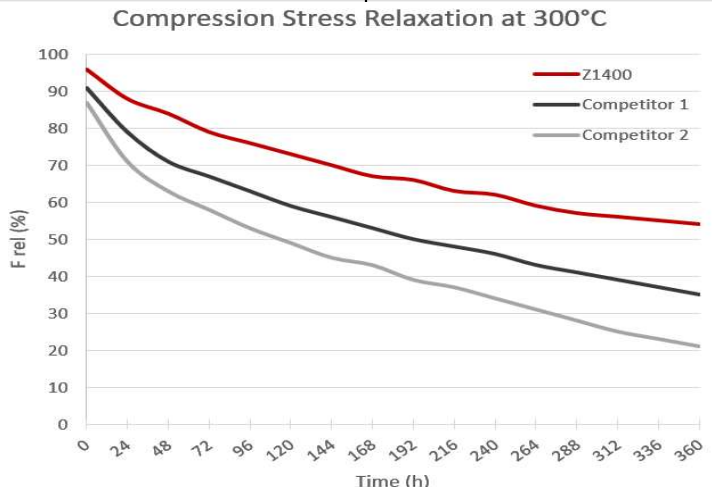
ADDITIONAL INFORMATION

- Service Temperature of 5° to 635°F
- Compatible with amines < 100°F
- Does not melt at 350°C (under an air environment)
- Compatible with Sour Gas < 64%
- Spec: ASTM

This information is accurate and reliable to the best of our knowledge. However, Marco Rubber makes no warranty, expressed or implied, that parts manufactured from this material will perform satisfactorily in the customer's application. It is the customer's responsibility to evaluate parts prior to use.

PHYSICAL PROPERTIES

ORIGINAL PROPERTIES	ASTM Method	Typical Test Results
Color		Black
Material Type	FFKM	FFKM
Hardness, Shore A	D2240	74
Tensile Strength, MPa (psi)	D412	18.91 (2,742)
Elongation at Break, %	D412	218
Min Operating Temp (lower spikes)		-15°C (5°F)
Max Operating Temp (higher spikes)		335°C (635°F)
Low Temperature (TR10), °C		-2

COMPRESSION STRESS RELAXATION	
<p>Z1400 is one of the most thermally resilient FFKM compounds currently available on the market. With a low compression set and enhanced extreme temperature sealing force retention, Markez Z1400 outperforms the competition.</p> <p>When tested for 360 hrs at 300°C against a group of FFKM competitors, Z1400 holds over 50% of its original sealing force. Because of its first-rate compression stress relaxation resistance and thermal stability, Z1400 offers fantastic long term, high temperature sealing.</p>	

HEAT AGING	Test Conditions	Typical Test Results
Hardness Change, Shore A	70 hrs. @ 290°C	-3
Tensile Strength Change, %	70 hrs. @ 290°C	-12
Ultimate Elongation Change, %	70 hrs. @ 290°C	-1
Weight Loss, %	70 hrs. @ 290°C	-0.3
HEAT AGING	Test Conditions	Typical Test Results
Hardness Change, Shore A	72 hrs. @ 300°C	-5
Weight Loss, %	72 hrs. @ 300°C	-0.9
HEAT AGING	Test Conditions	Typical Test Results
Hardness Change, Shore A	72 hrs. @ 335°C	-10
Weight Loss, %	72 hrs. @ 335°C	-3.7

GAS PERMEATION RATE, T = 30°C	Units	Typical Test Results
Nitrogen	cm ³ (stp)*mm/m ² *atm*d	250
Oxygen	cm ³ (stp)*mm/m ² *atm*d	450
Helium	cm ³ (stp)*mm/m ² *atm*d	5400
Electric Properties – Dielectric constant and loss factor at 50Hz. Resistivity 100 V direct tension.	Units	Typical Test Results
Dielectric Constant	ε'	3.5
Loss Factor	tan(δ)	0.03
Surface Resistivity Rs	Ω	5 E16
Volume Resistivity Ry	Ω*cm	6.1 E16
STICTION TO AL	Units	Typical Test Results
Max Force	N	314
Energy	N*mm	349
THERMAL EXPANSION	Units	Typical Test Results
Longitudinal	10 ⁻⁶ 1/K	317
Transversal	10 ⁻⁶ 1/K	332
αT/αL		0.95

CHEMICAL TESTING - Nitric Acid, 65%	Test	Typical Test Results
80°C for 168 hrs.	Change in Tensile Strength, %	-61
80°C for 168 hrs.	Change in Elongation, %	34
80°C for 168 hrs.	Change in Volume, %	2.8
CHEMICAL TESTING - Ethylene Diamine	Test	Typical Test Results
60°C for 336 hrs.	Change in Tensile Strength, %	30
60°C for 336 hrs.	Change in Elongation, %	25
60°C for 336 hrs.	Change in Volume, %	3
CHEMICAL TESTING - Ammonia, 30%	Test	Typical Test Results
100°C for 168 hrs.	Change in Tensile Strength, %	-5
100°C for 168 hrs.	Change in Elongation, %	10
100°C for 168 hrs.	Change in Volume, %	2