

# Identification for Mooney model: $\alpha$ gel, $\theta=6$ , $V=1.25$

ABAQUS

Mooney model

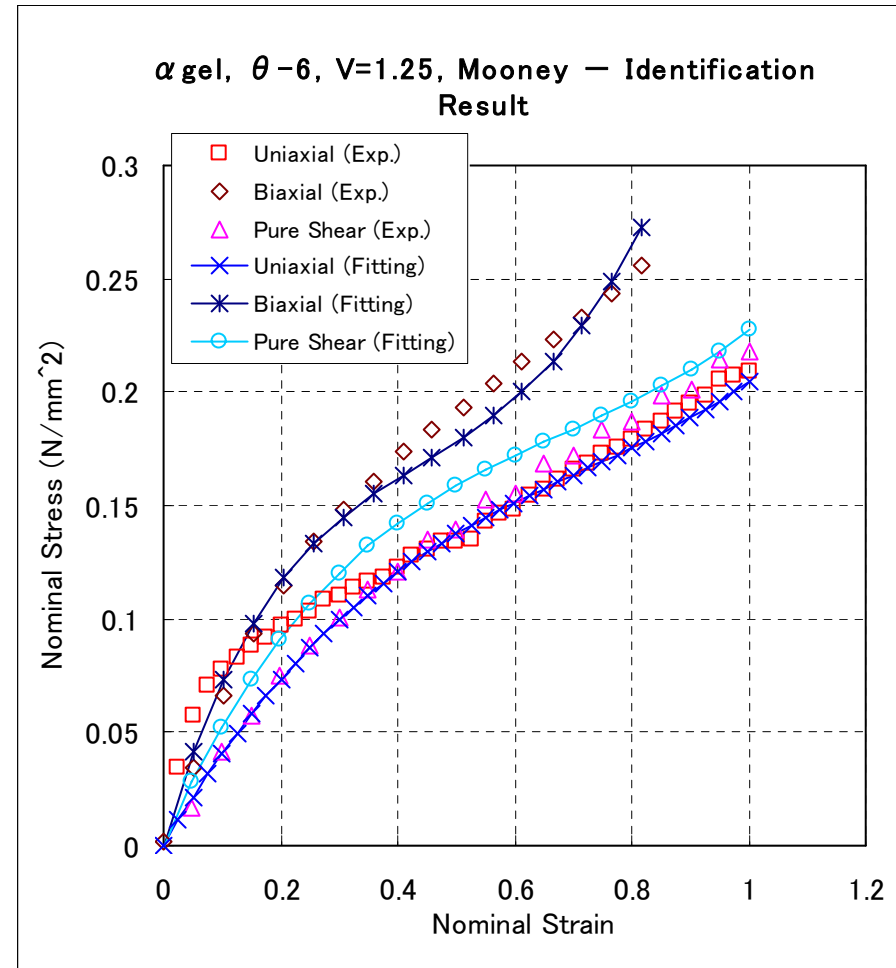
$$W = \sum_{m=1}^N \sum_{n=1}^N C_{mn} (I_1 - 3)^m (I_2 - 3)^n$$

Rate of Loading in Tension Test(s)

1.25 mm/s

Coefficient

Coefficient	
C10 (C1)	0.0681034
C01 (C2)	0.00767583
C20 (C3)	-0.00748983
C11 (C4)	-0.00129836
C02 (C5)	
C30 (C6)	0.00161044
C21 (C7)	
C12 (C8)	
C03 (C9)	
C40 (C10)	



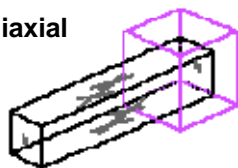
Identification result:  
Stress-strain relationship

# Analysis with Mooney model: $\alpha$ gel, $\theta=6$ , $V=1.25$

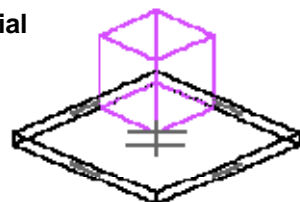
ABAQUS

Input File: gel6\_v1.25\_abaqus\_m.inp

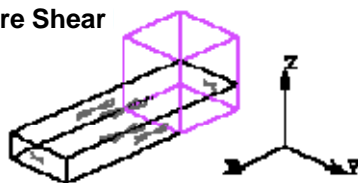
Uniaxial



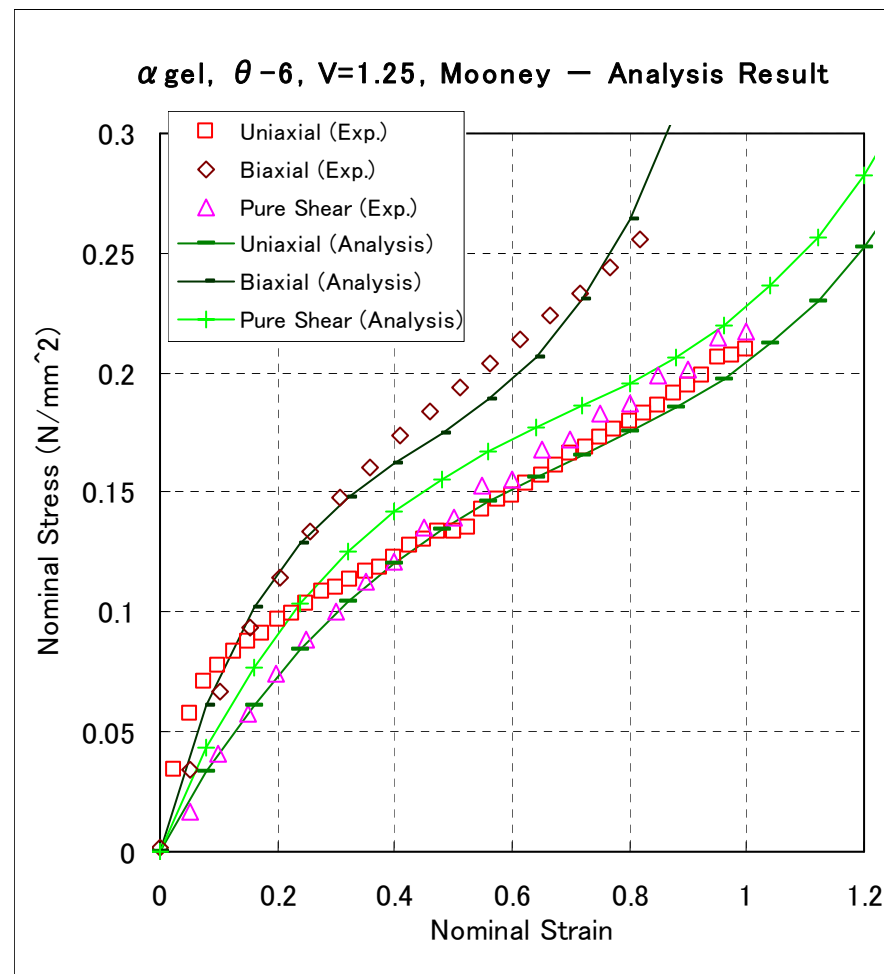
Biaxial



Pure Shear



Analysis model



Analysis result:  
Stress-strain relationship

# Identification for Ogden model: $\alpha$ gel, $\theta=6$ , $V=1.25$

## ABAQUS

### Ogden model

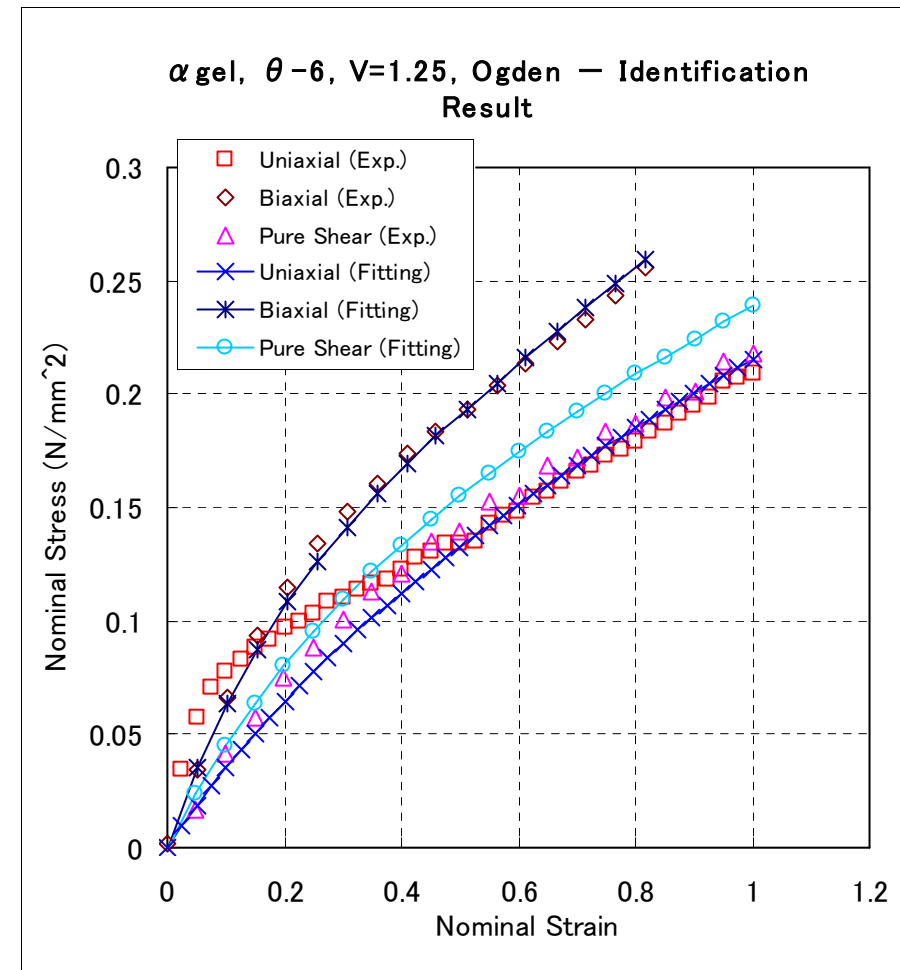
$$W = \sum_{n=1}^N \frac{2\mu_n}{\alpha_n^2} [(\lambda_1^{\alpha_n} + \lambda_2^{\alpha_n} + \lambda_3^{\alpha_n}) - 3]$$

### Rate of Loading in Tension Test(s)

1.25 mm/s

### Coefficient

Coefficient		
Order	$\mu$	$\alpha$
1	0.113853	1.98230
2	0.000584194	2.33678
3	0.00736909	-2.04517
4	0.00790290	0.835210



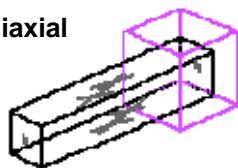
Identification result:  
Stress-strain relationship

# Analysis with Ogden model: $\alpha$ gel, $\theta=6$ , $V=1.25$

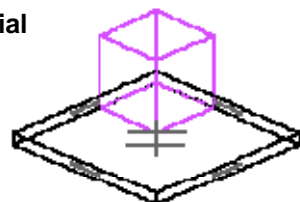
ABAQUS

Input File: gel6\_v1.25\_abaqus\_o.inp

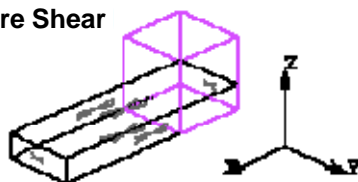
Uniaxial



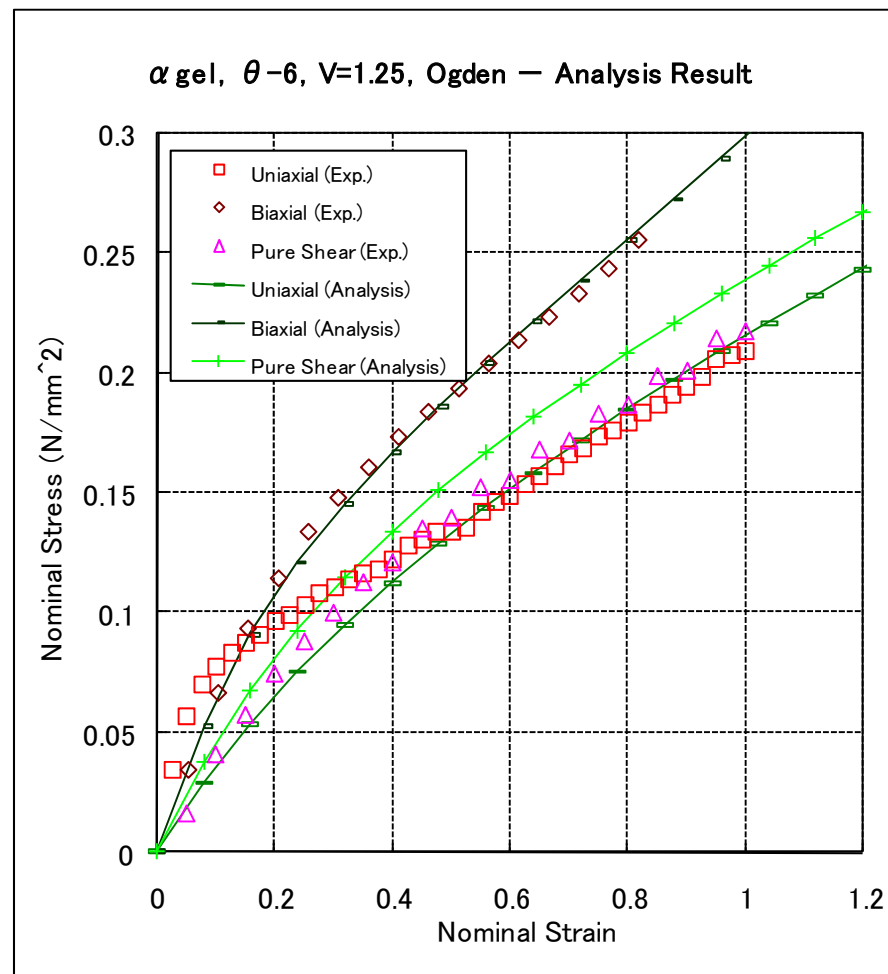
Biaxial



Pure Shear



Analysis model



Analysis result:  
Stress-strain relationship