# Identification for Mooney model: Hardness (65), Damping (Small), V=2,

**LS-DYNA**

## Mooney model

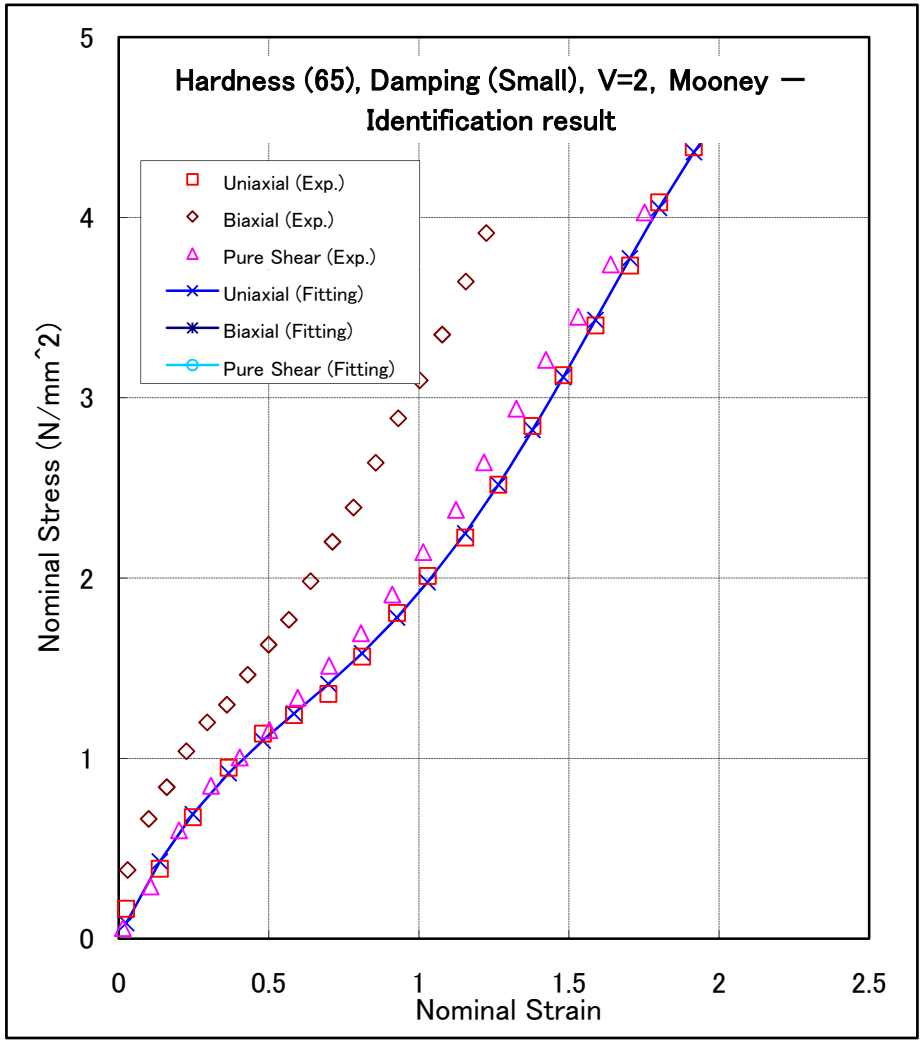
$$W = \sum_{m=1}^{N}\sum_{n=1}^{N} C_{mn}(J_1 - 3)^m (J_2 - 3)^n$$

## Rate of Loading in Tension Test(s)

2 mm/s

## Coefficient

| Coefficient | |
|---|---|
| C10 (C1) | 0.6025 |
| C01 (C2) | −0.003853 |
| C20 (C3) | 0.4192 |
| C11 (C4) | −0.9579 |
| C02 (C5) | 0.6025 |
| C30 (C6) | −0.003853 |
| C21 (C7) | |
| C12 (C8) | |
| C03 (C9) | |
| C40 (C10) | |



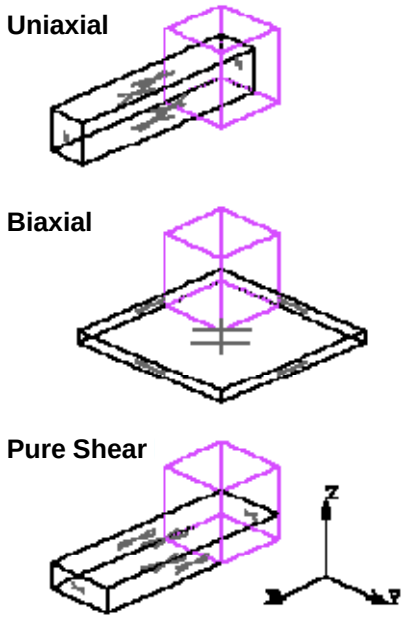

**Identification result: Stress-strain relationship**

# Analysis with Mooney model: Hardness (65), Damping (Small), V=2

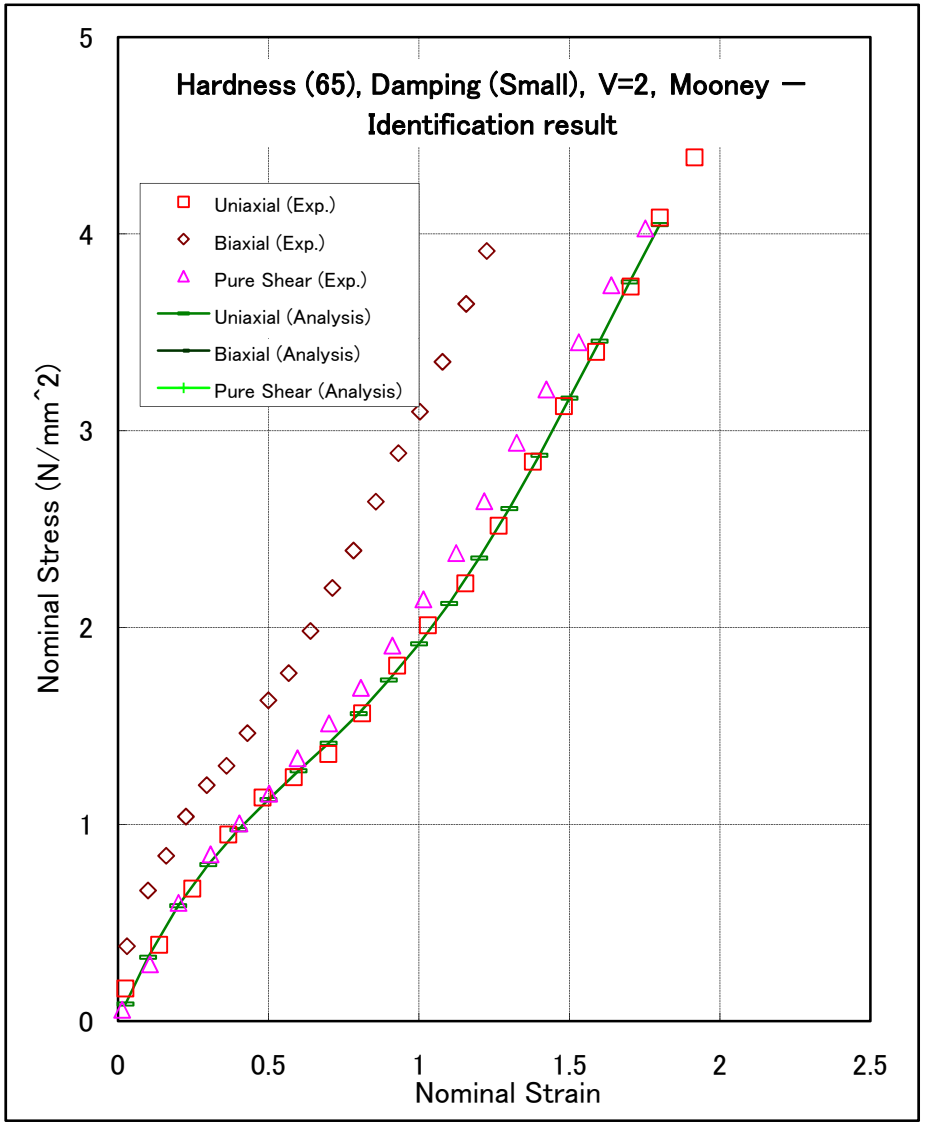
Japan Association for Nonlinear CAE

**LS-DYNA**

**Input File:** input1.dat (Uniaxial)
input2.dat (Biaxial)
input3.dat (Pure Shear)




**Analysis model**




**Analysis result:**
**Stress-strain relationship**

# Identification for Mooney model: Hardness (65), Damping (Small), V=20

Japan Association for Nonlinear CAE

**LS-DYNA**

### Mooney model

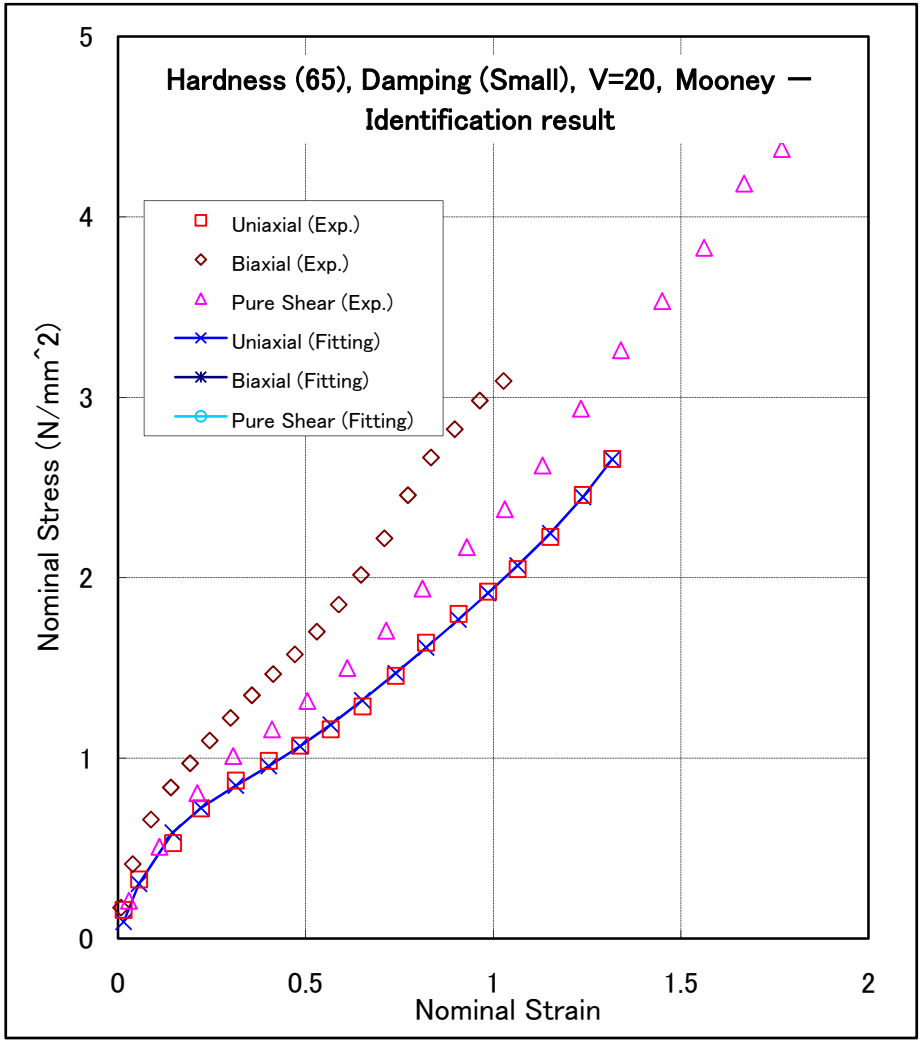
$$W = \sum_{m=1}^{N}\sum_{n=1}^{N} C_{mn}(J_1 - 3)^m (J_2 - 3)^n$$

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

20 mm/s

### Coefficient

| Coefficient | |
|---|---|
| C10 (C1) | −2.143 |
| C01 (C2) | 3.258 |
| C20 (C3) | −1.564 |
| C11 (C4) | 4.189 |
| C02 (C5) | −2.059 |
| C30 (C6) | 0.03947 |
| C21 (C7) | |
| C12 (C8) | |
| C03 (C9) | |
| C40 (C10) | |



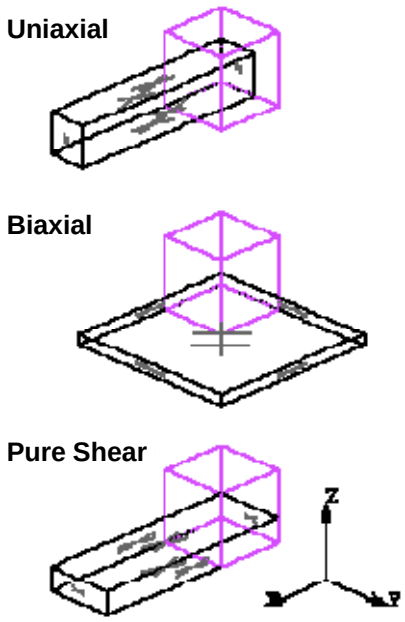

**Identification result: Stress-strain relationship**

# Analysis with Mooney model: Hardness (65), Damping (Small), V=20

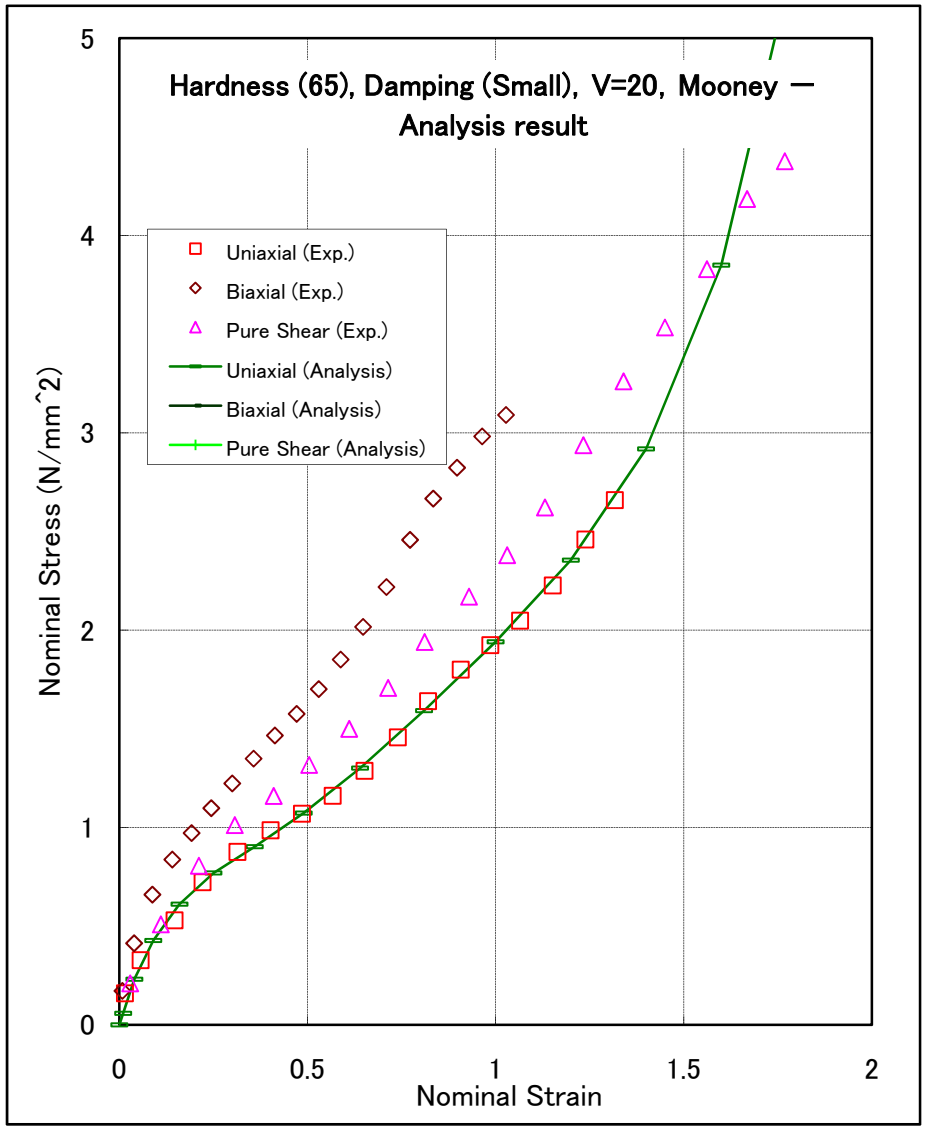
Japan Association for Nonlinear CAE

**LS-DYNA**

**Input File:** input1.dat (Uniaxial)
input2.dat (Biaxial)
input3.dat (Pure Shear)




**Analysis model**




**Analysis result:**
**Stress-strain relationship**

# Identification for Odgen model: Hardness (65), Damping (Small), V=2

**LS-DYNA**

**Ogden model**

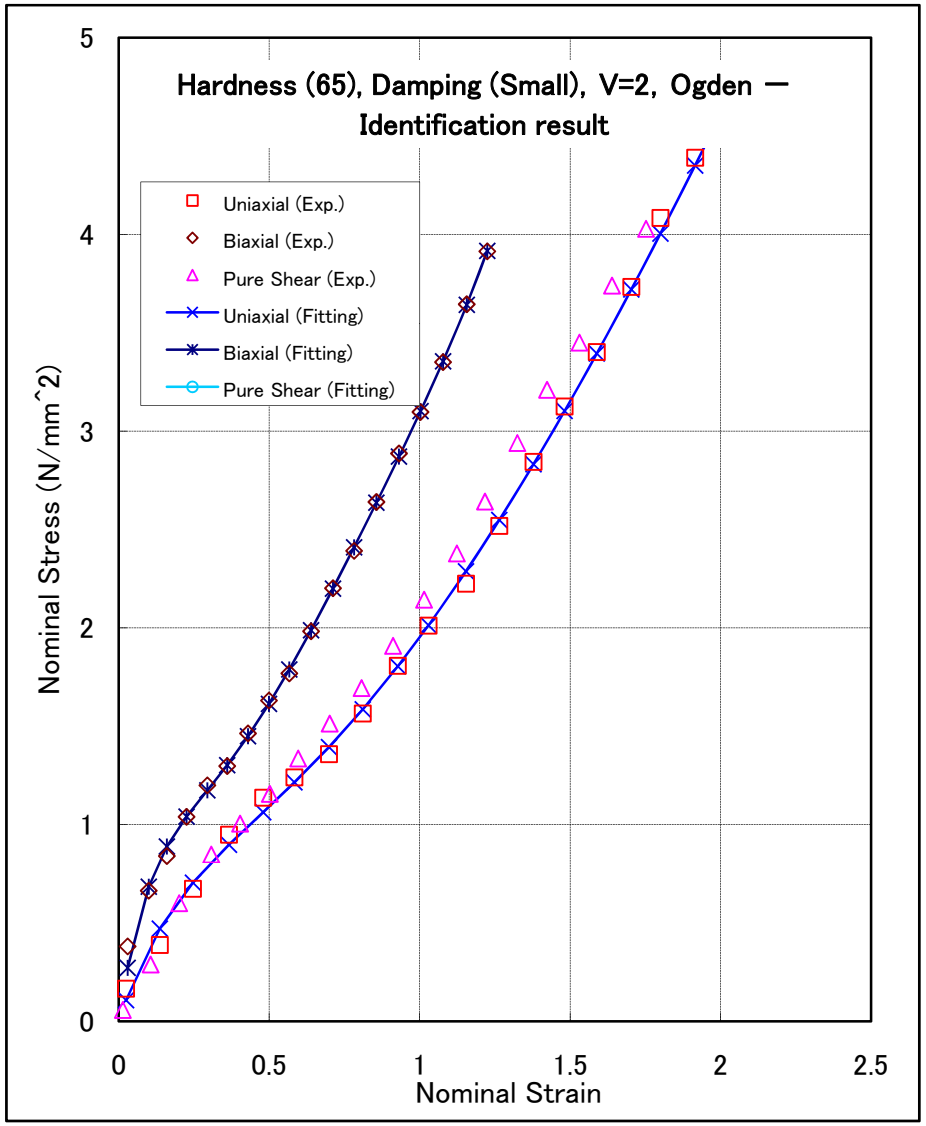
$$W = \sum_{i=1}^{3} \sum_{j=1}^{N} \frac{\mu_j}{\alpha_j} (\lambda_i^{\alpha_j} - 1)$$

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

2 mm/s

**Coefficient**

| Coefficient | | |
|---|---|---|
| Order | $\mu$ | $\alpha$ |
| 1 | 7.2126 | 1.7834 |
| 2 | −37.53 | 0.75312 |
| 3 | −19.068 | −0.76634 |
| 4 | −5.1939 | −0.75058 |



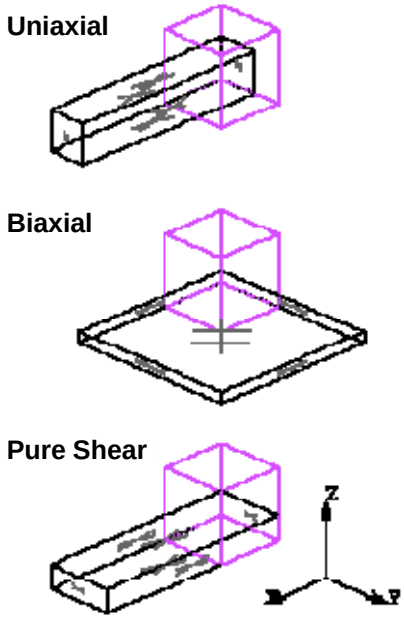

**Identification result: Stress-strain relationship**

# Analysis with Odgen model: Hardness (65), Damping (Small), V=2

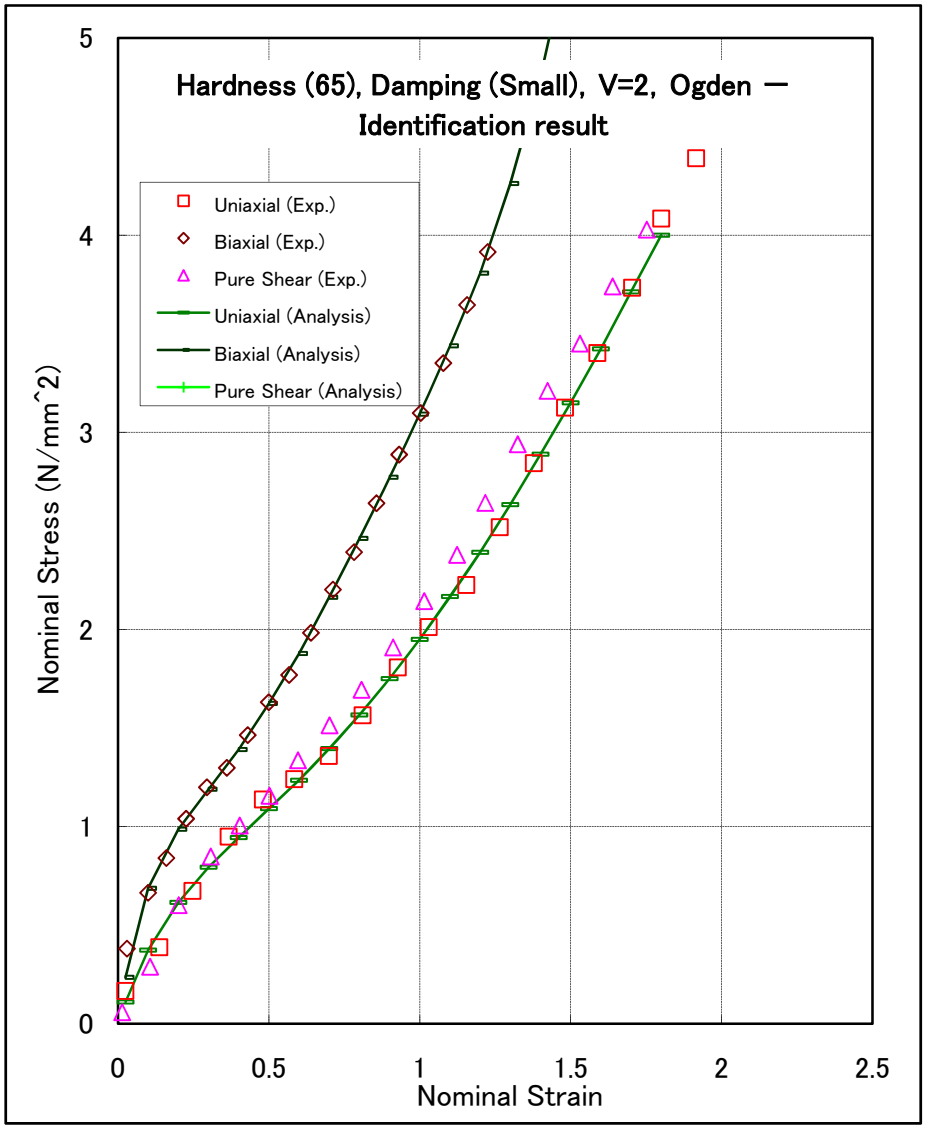
Japan Association for Nonlinear CAE

**LS-DYNA**

**Input File:** input1.dat (Uniaxial)
input2.dat (Biaxial)
input3.dat (Pure Shear)




**Analysis model**




**Analysis result:**
**Stress-strain relationship**

# Identification for Odgen model: Hardness (65), Damping (Small), V=20

**LS-DYNA**

## Ogden model

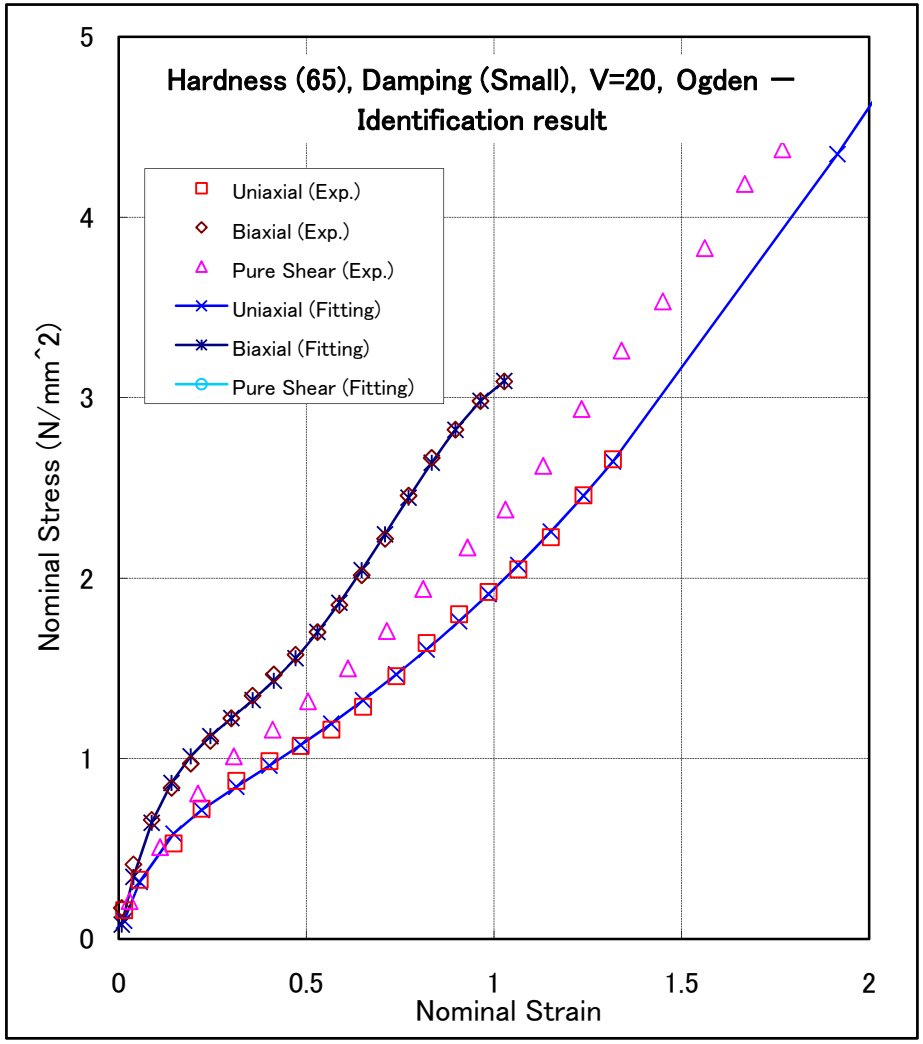
$$W = \sum_{i=1}^{3} \sum_{j=1}^{N} \frac{\mu_j}{\alpha_j} (\lambda_i^{\alpha_j} - 1)$$

## Rate of Loading in Tension Test(s)

20 mm/s

## Coefficient

| Coefficient | | |
|---|---|---|
| Order | $\mu$ | $\alpha$ |
| 1 | −2.6391 | 2.8439 |
| 2 | −42.831 | −0.60908 |
| 3 | 14.84 | −2.7979 |
| 4 | −5.0609 | −5.5077 |



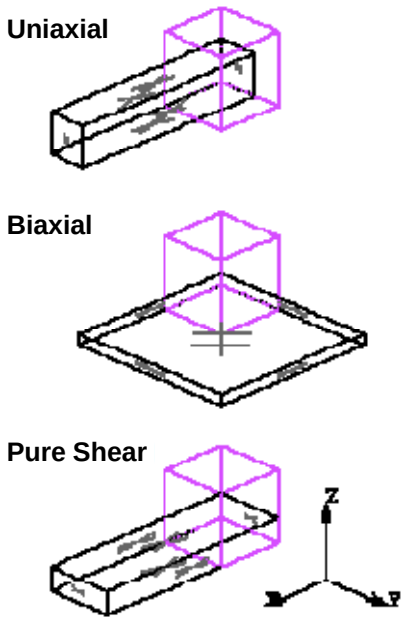

**Identification result: Stress-strain relationship**

# Analysis with Odgen model: Hardness (65), Damping (Small), V=20

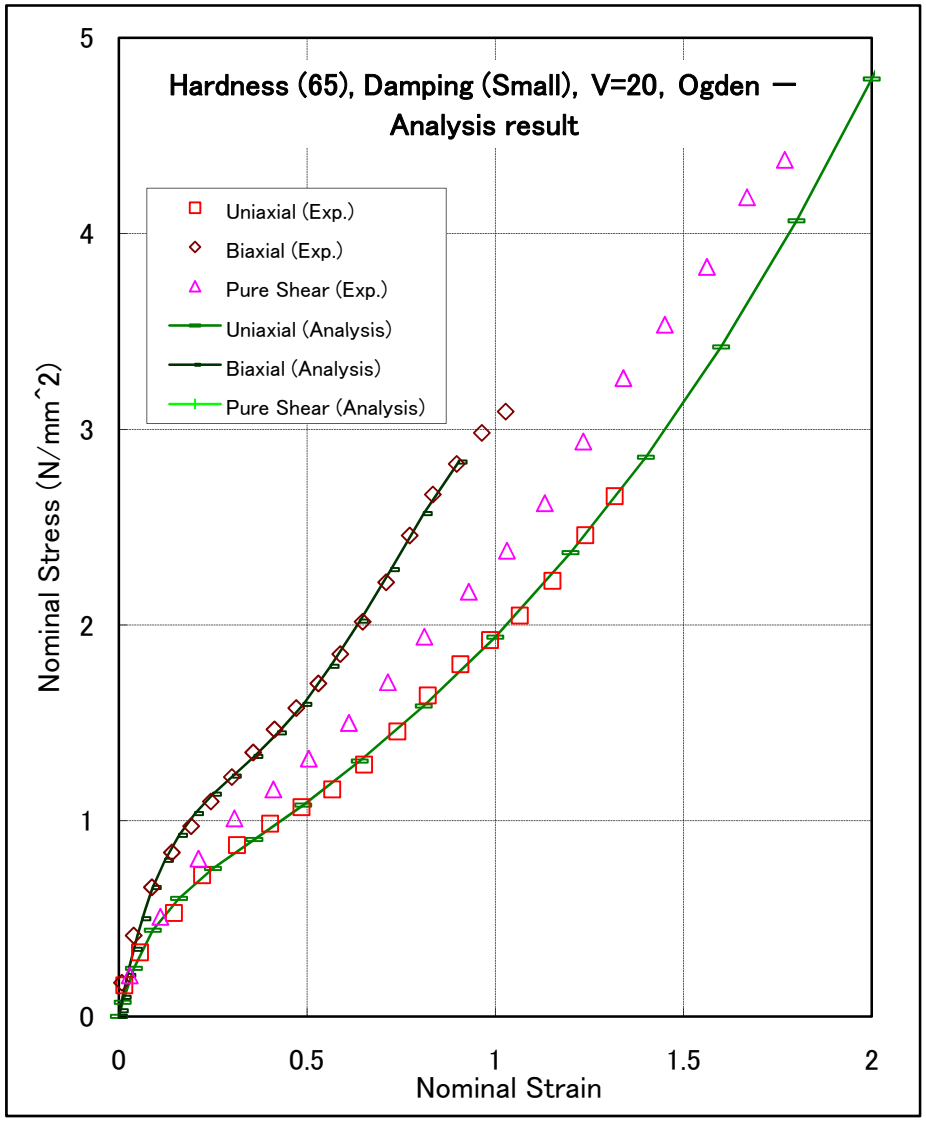
Japan Association for Nonlinear CAE

**LS-DYNA**

**Input File:** input1.dat (Uniaxial)
input2.dat (Biaxial)
input3.dat (Pure Shear)




**Analysis model**




**Analysis result:**
**Stress-strain relationship**