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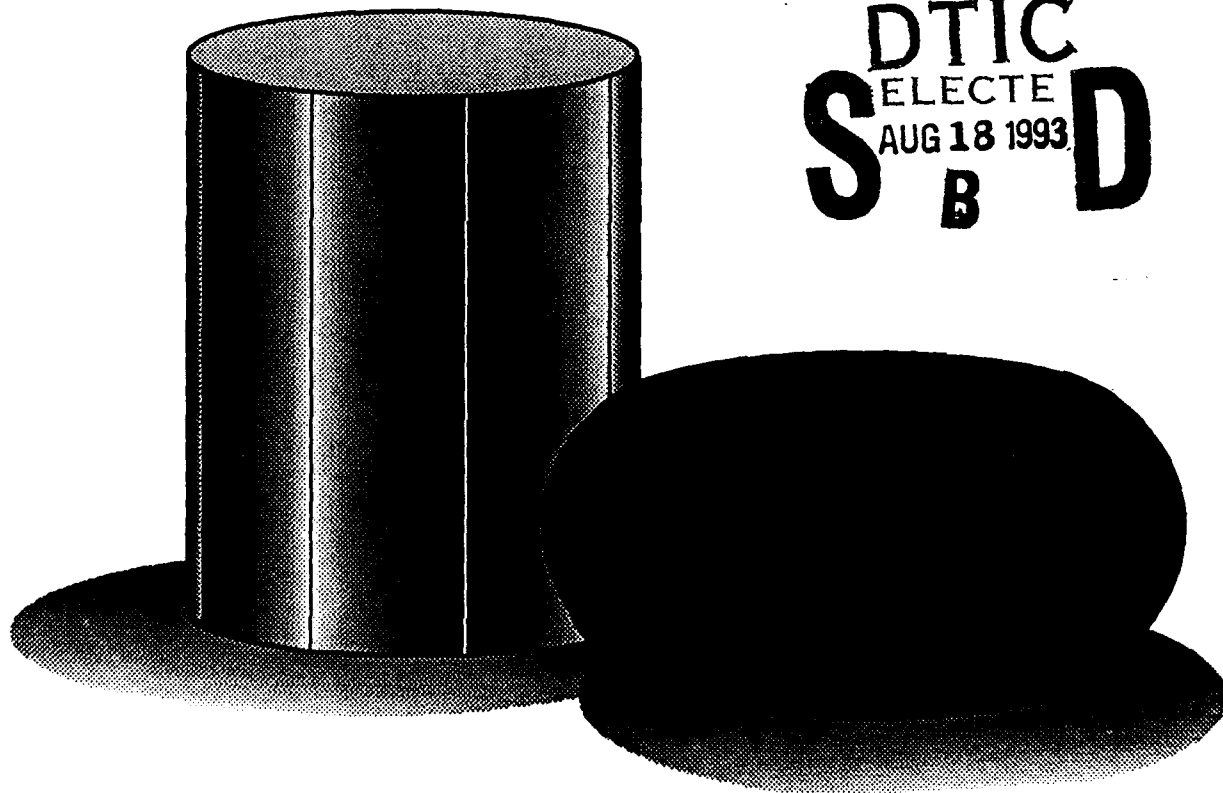


1

Atlas of Formability

Chromium Steel

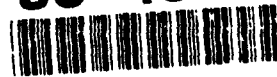
Fe - Cr 12.25 Flow Stress Curves



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13. ABSTRACT (Maximum 200 words)

In this investigation, flow behavior of Chromium Steel was studied by conducting compression tests over a wide range of temperatures and strain rates. Stress-strain curves were recorded for each test condition. These data are essential in metalworking process design or finite element analysis of high temperature deformation.

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CHROMIUM STEEL (Fe - Cr 12.25)**

by

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Johnstown, PA 15904**

for

**Naval Industrial Resource Support Activity
Building 75-2, Naval Base
Philadelphia, PA 19112-5078**

June 30, 1991

The views, opinions, and/or findings contained in this report are those of the authors and should not be construed as an official Department of the Navy position, policy, or decision, unless so designated by other documentation

TABLE OF CONTENTS

Chemical composition	1
Testing Parameters	1
Stress-Strain Curves	2

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Fe - Cr 12.25

Chromium Steel

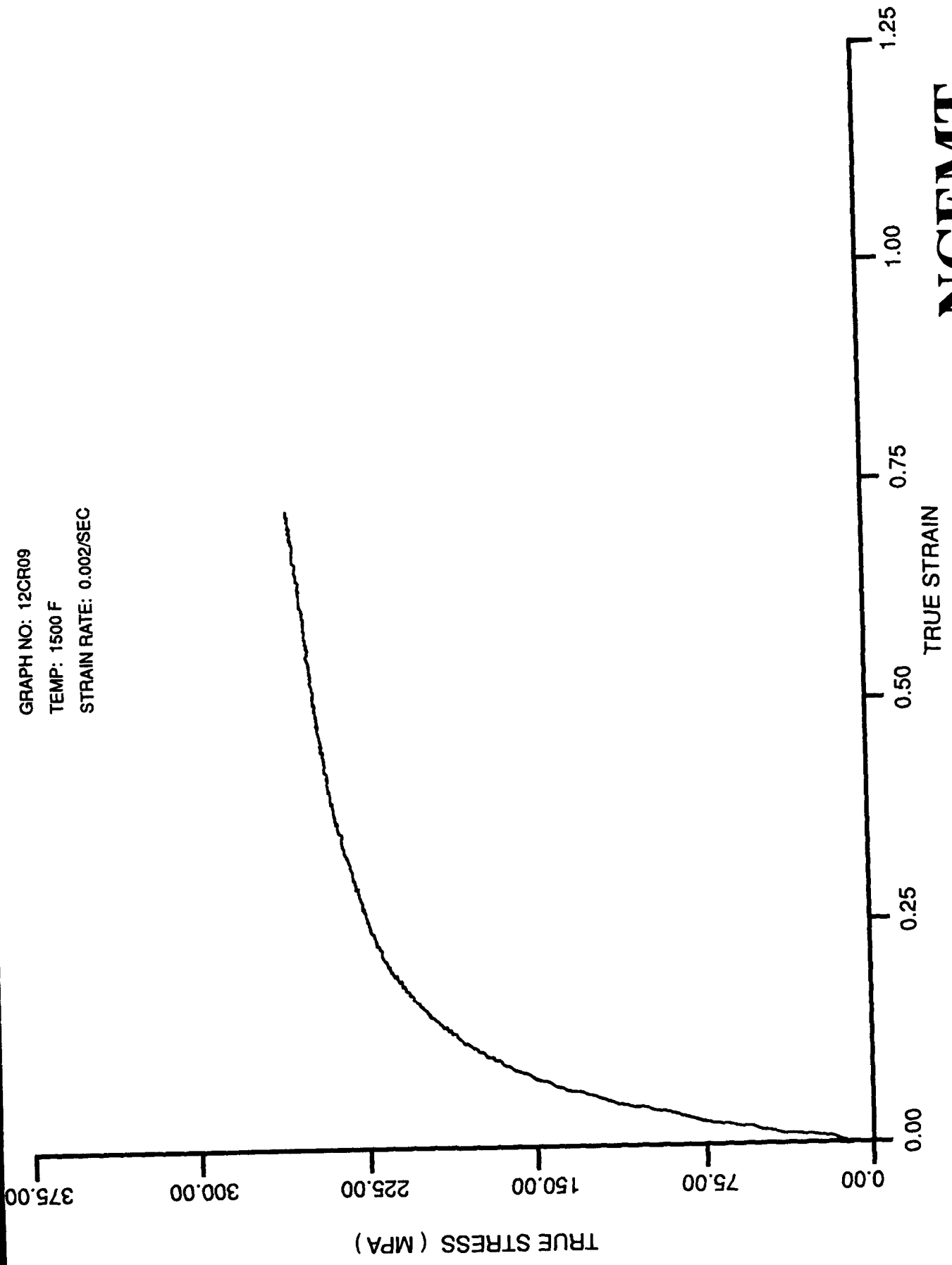
Composition:

C	Cb	Cr	Fe	Mn	Mo	Ni	Si
0.15	0.28	12.25	Bal.	0.62	0.02	0.52	0.25

Testing Parameters

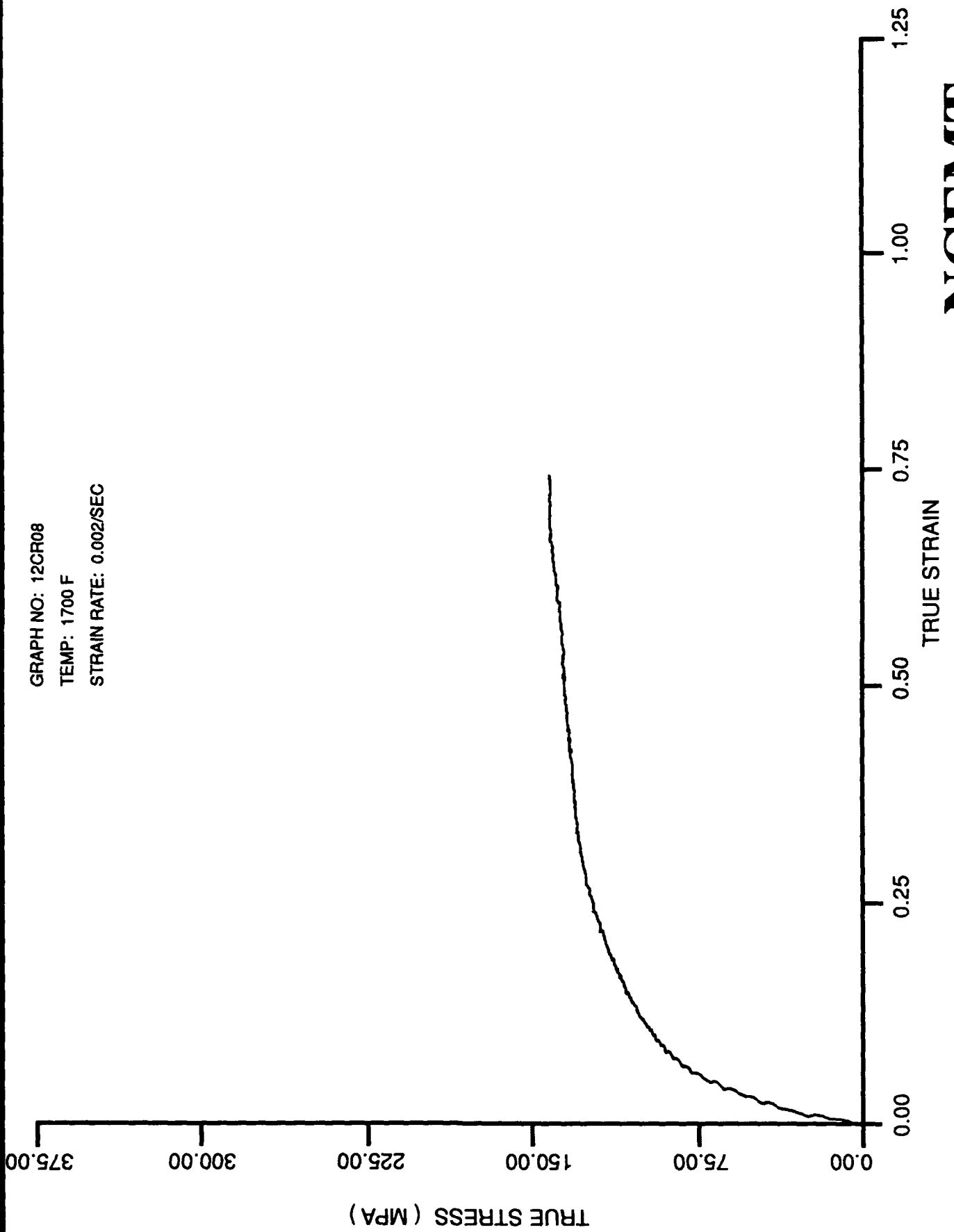
D ₀ (inch)	H ₀ (inch)	H _f (inch)	Strain Rate (1/sec.)	Temperature (deg. F)	Graph Number	Page Number
.500	.750	.362	0.002	1500	12CR09	2
.500	.750	.353	0.002	1700	12CR08	3
.500	.750	.342	0.002	1900	12CR06	4
.500	.750	.306	0.002	2100	12CR03	5
.500	.750	.341	0.002	2250	12CR02	6
-	-	-	0.002	Combination	12CR35	7
.500	.750	.359	0.020	1500	12CR20	8
.500	.750	.352	0.020	1700	12CR18	9
.500	.750	.363	0.020	1900	12CR16	10
.500	.750	.376	0.020	2100	12CR13	11
.500	.750	.364	0.020	2250	12CR12	12
-	-	-	0.020	Combination	12CR36	13
.500	.750	.373	0.500	1500	12CR29	14
.500	.750	.376	0.500	1700	12CR27	15
.500	.750	.374	0.500	1900	12CR25	16
.500	.750	.357	0.500	2100	12CR23	17
.500	.750	.381	0.500	2250	12CR21	18
-	-	-	0.500	Combination	12CR37	19

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STRAIN RATE: 0.002/SEC



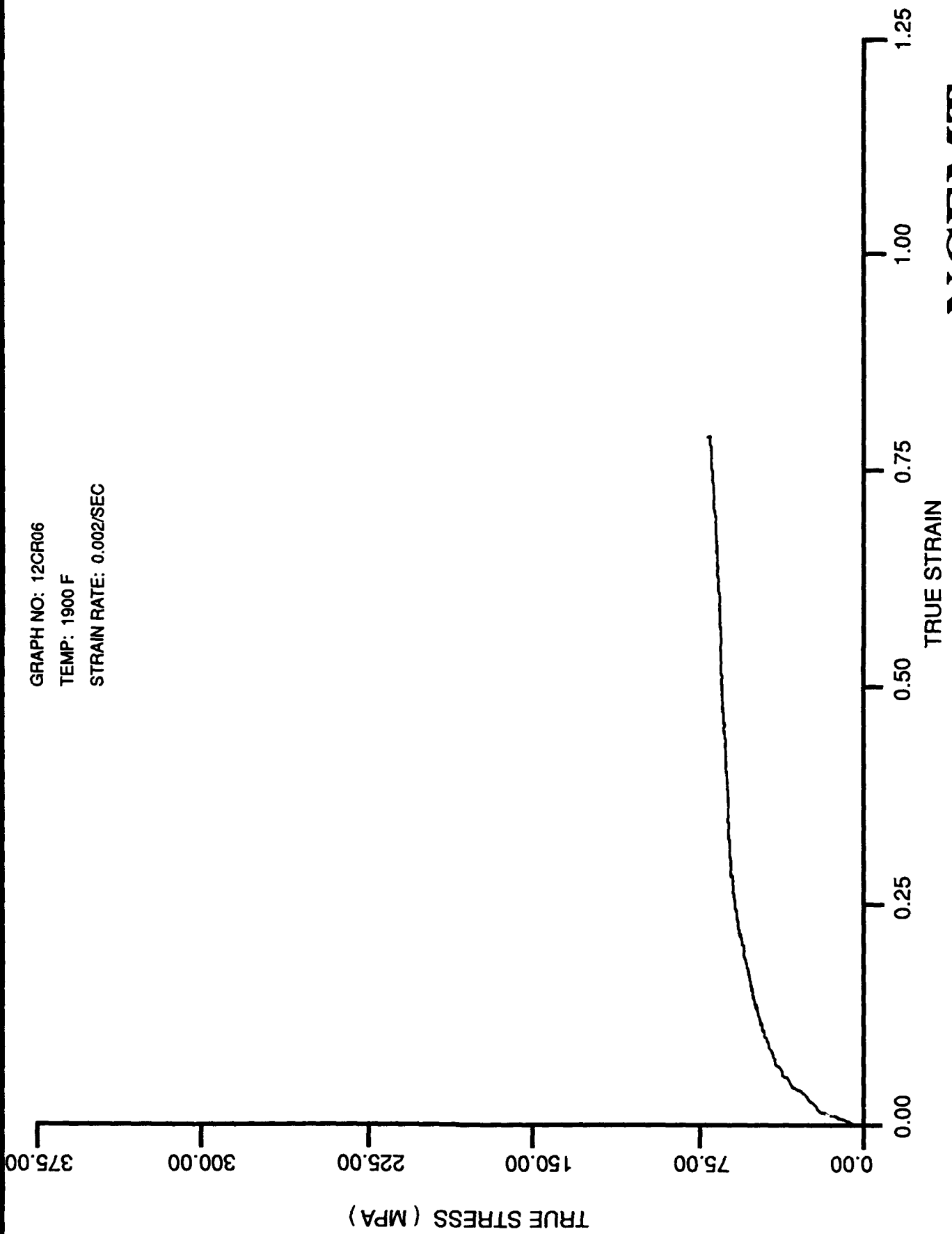
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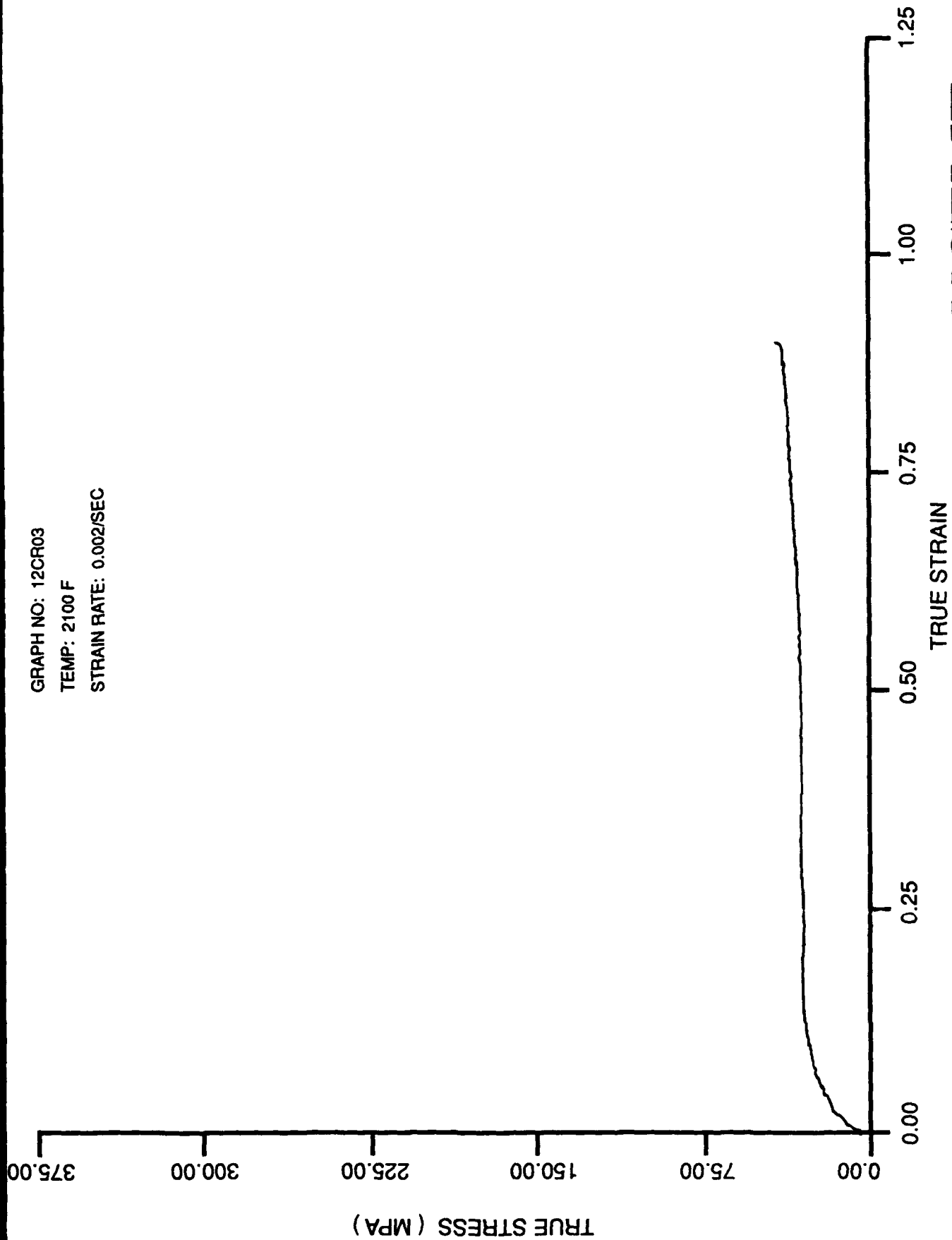


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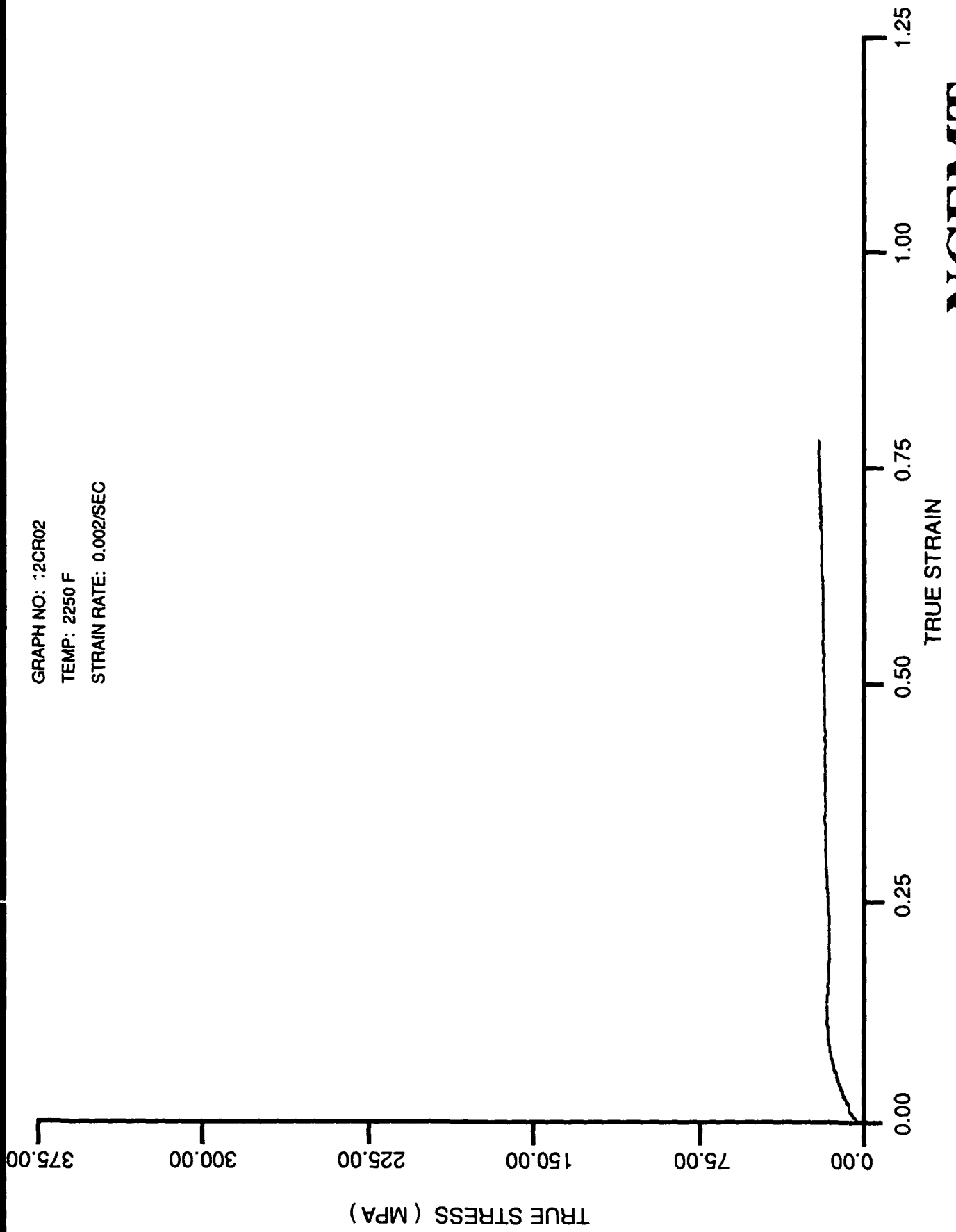


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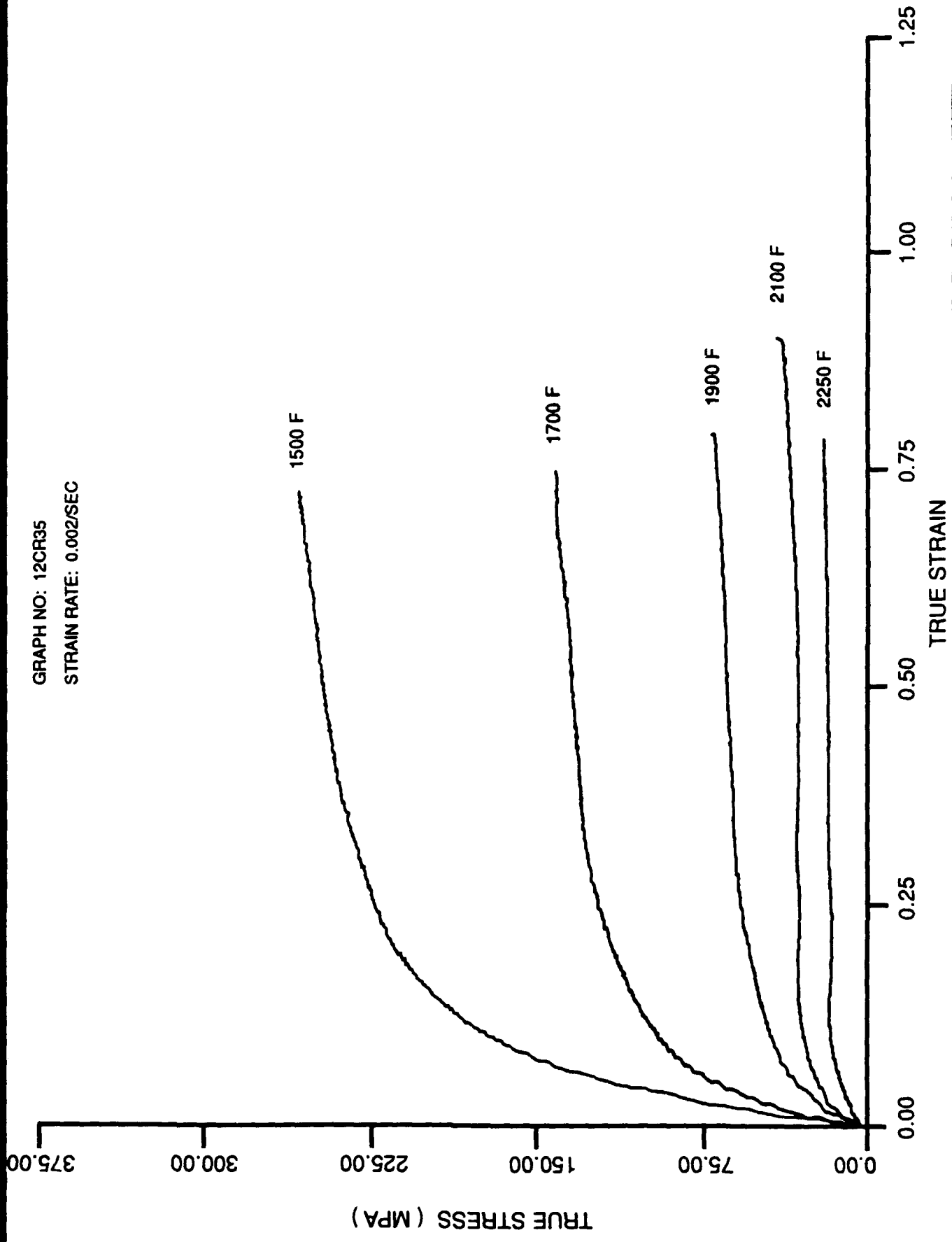
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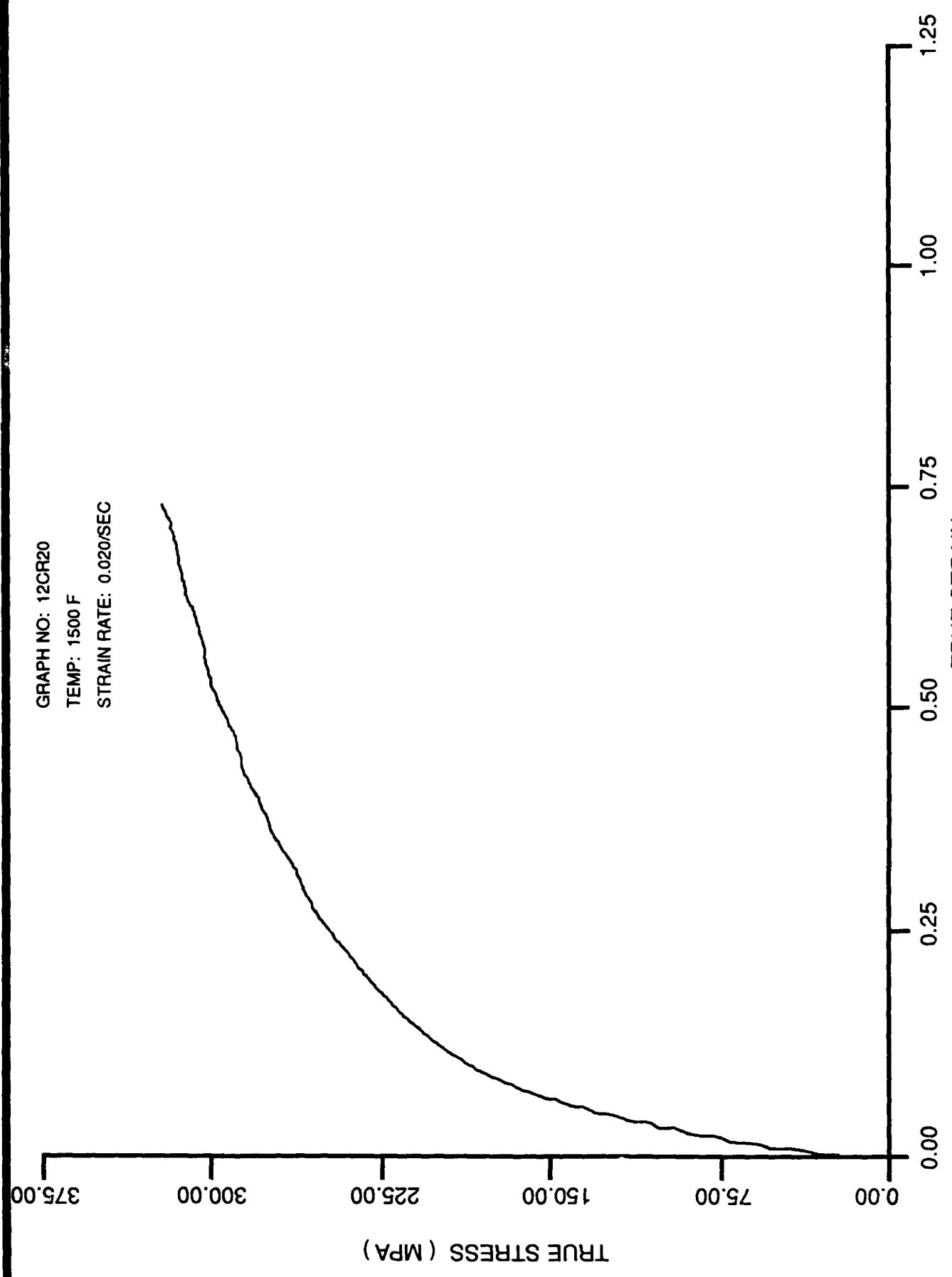


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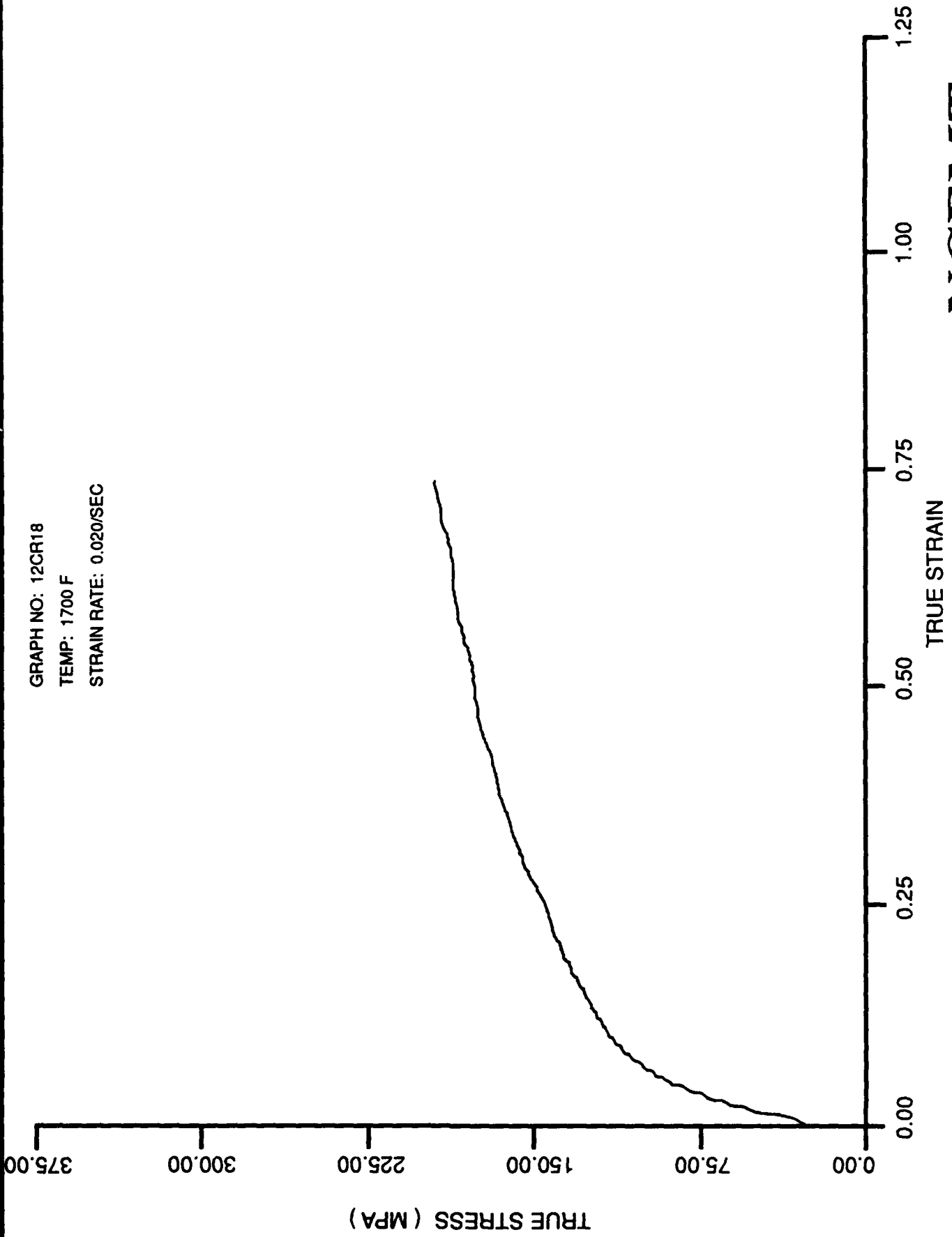
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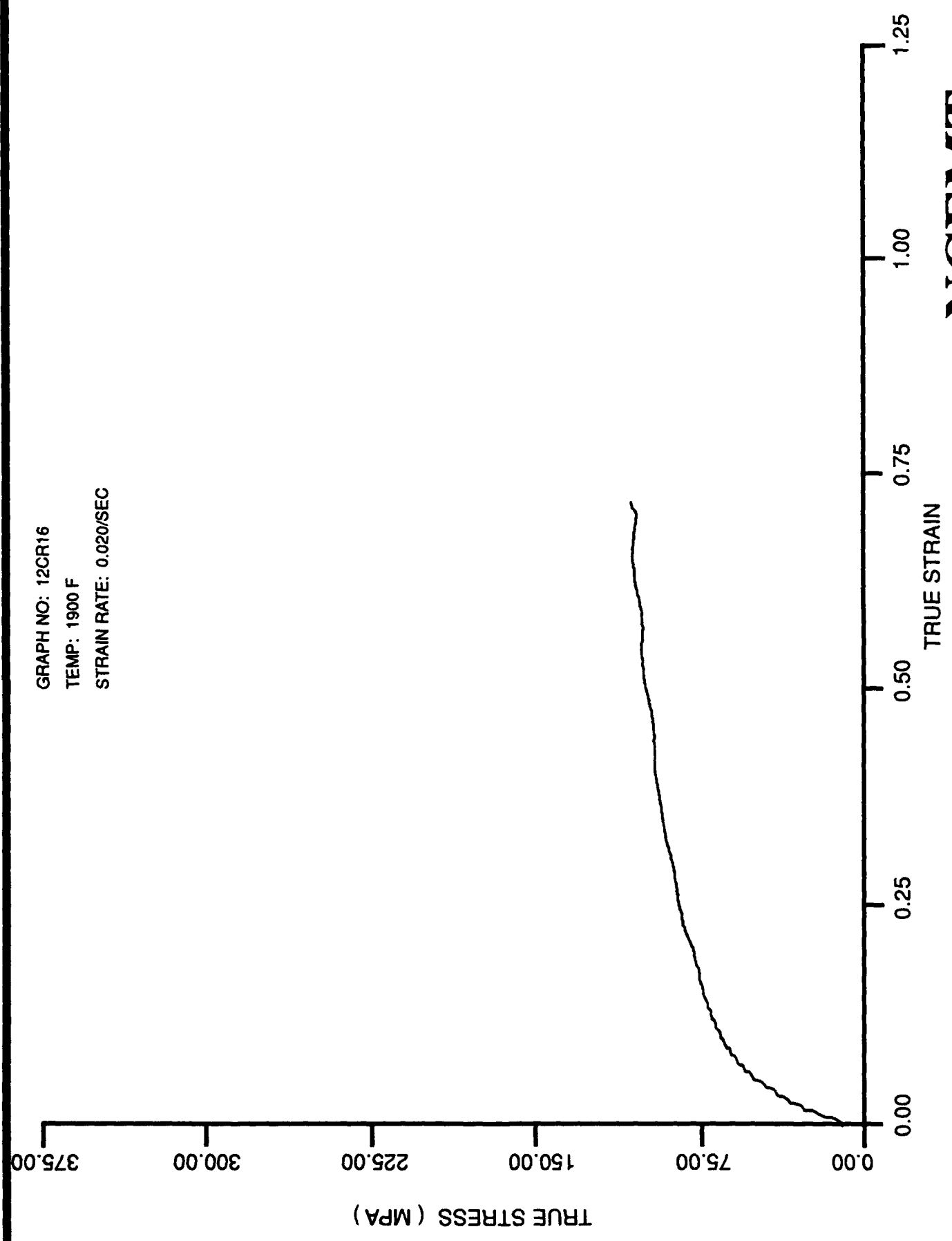
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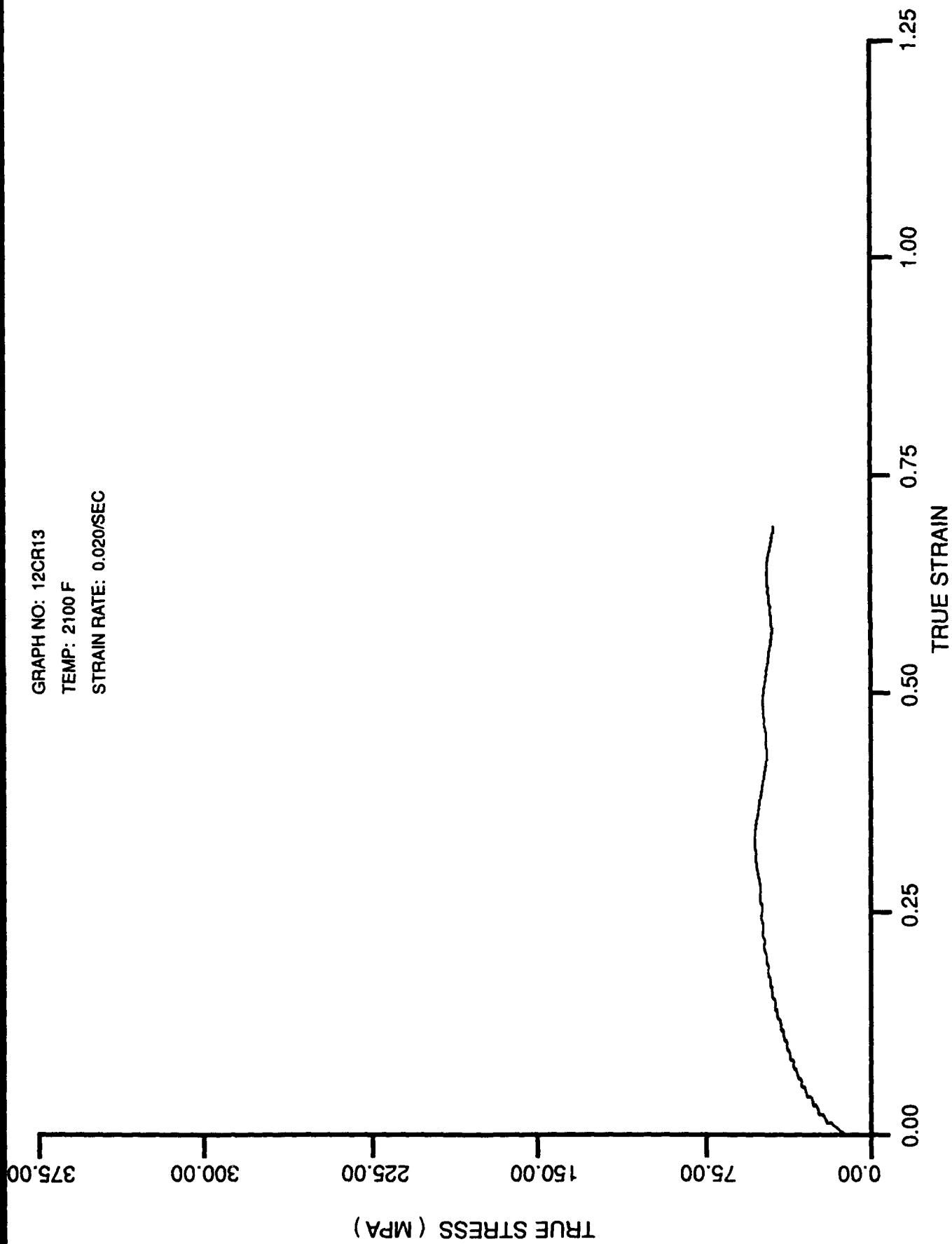
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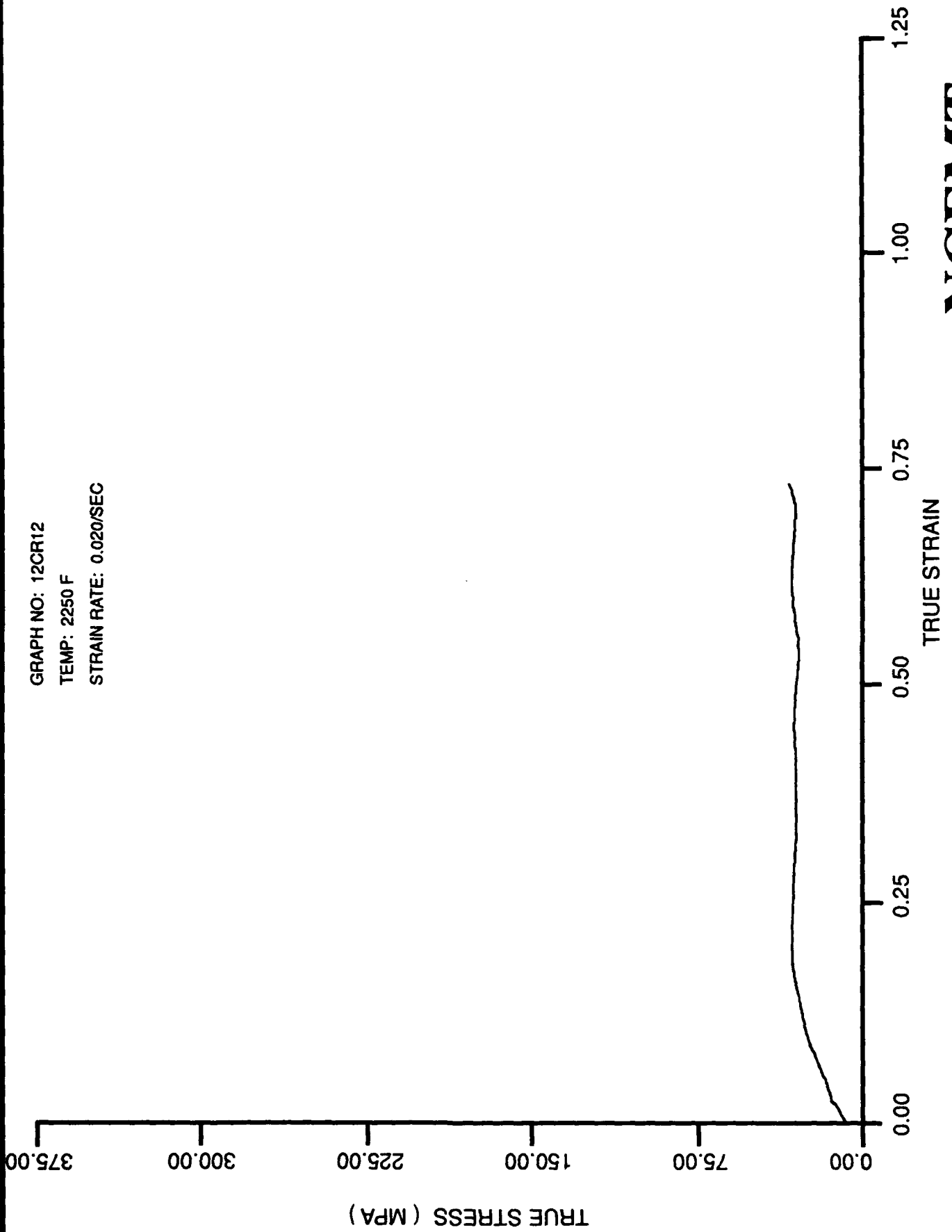


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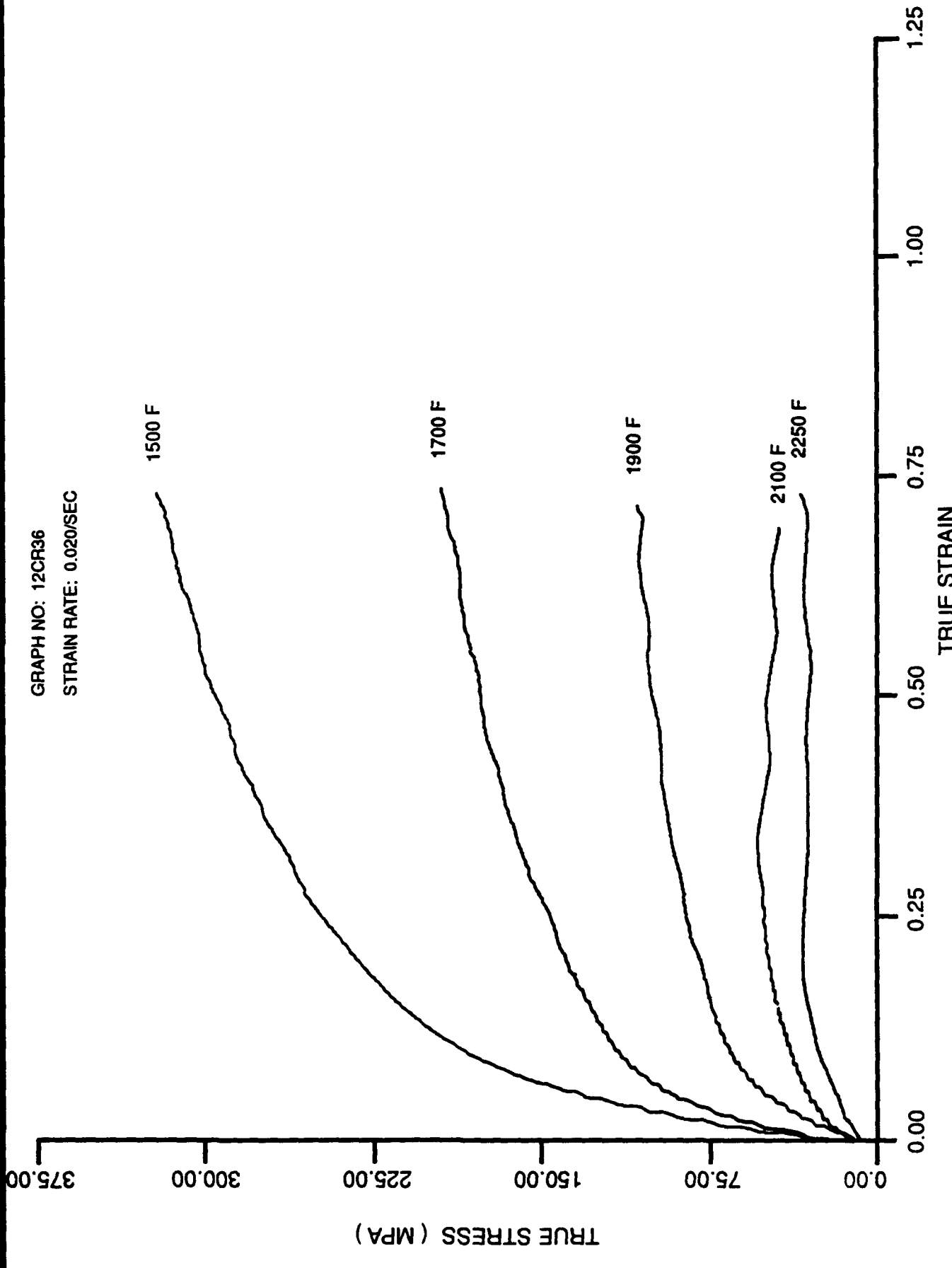
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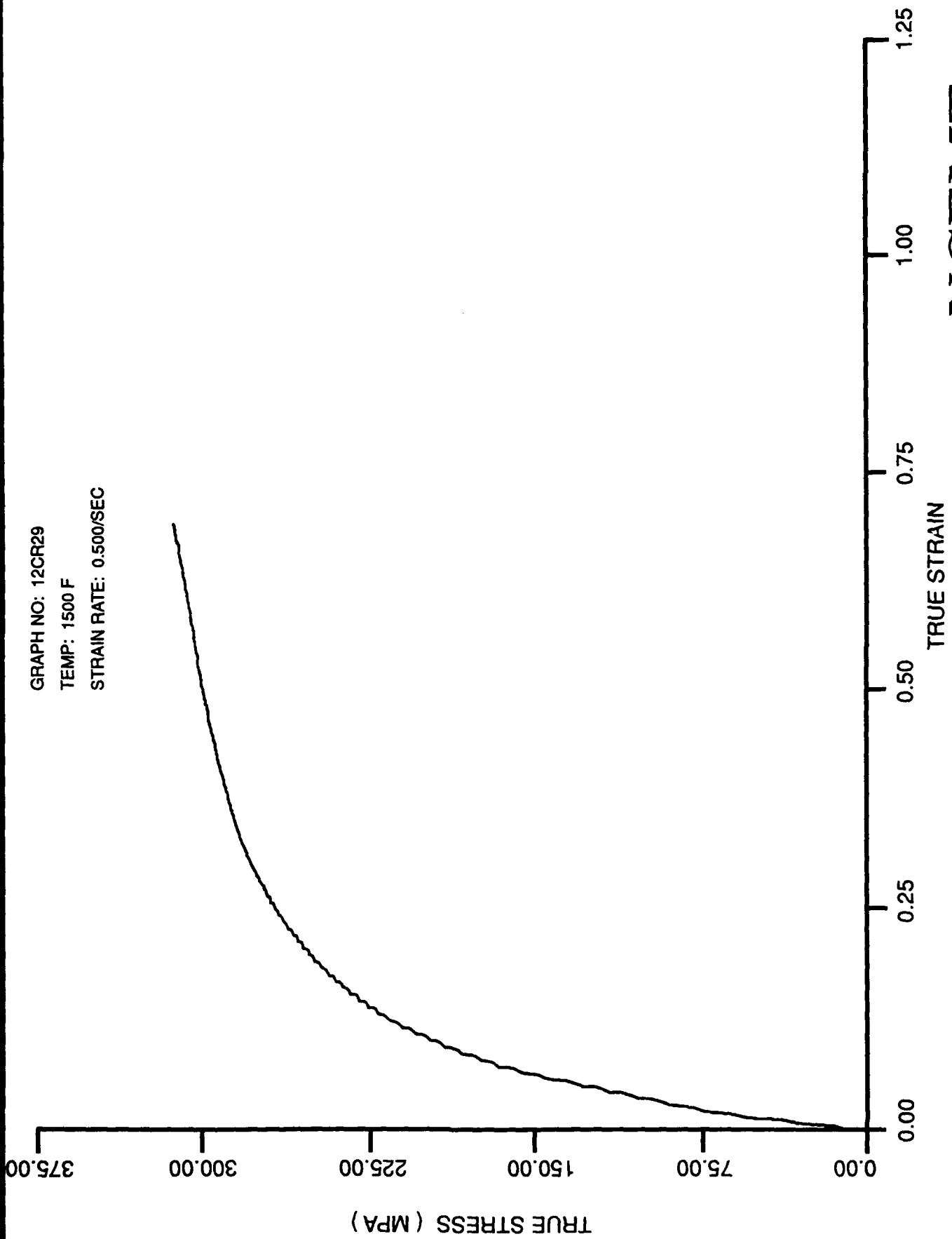
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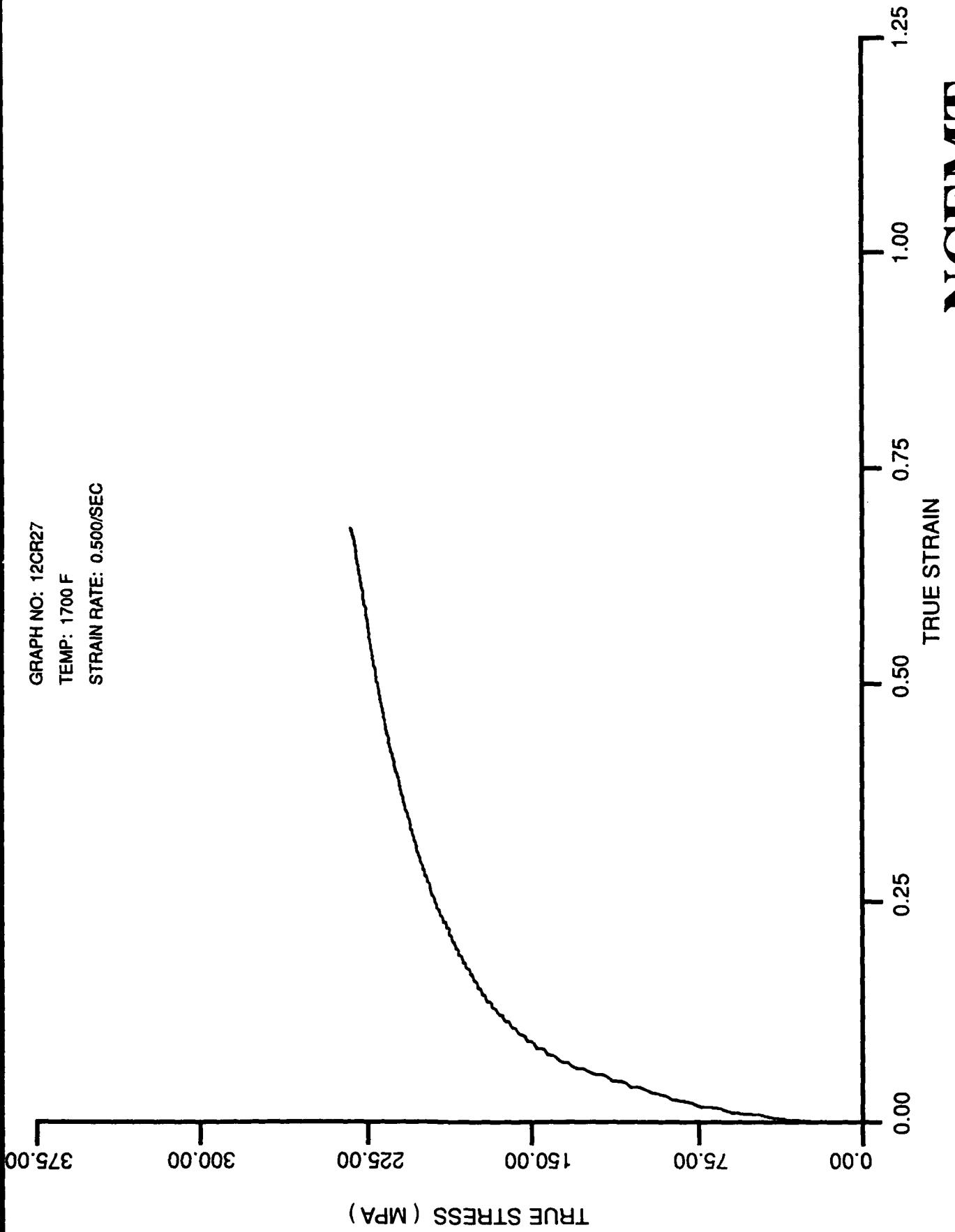
TRUE STRAIN

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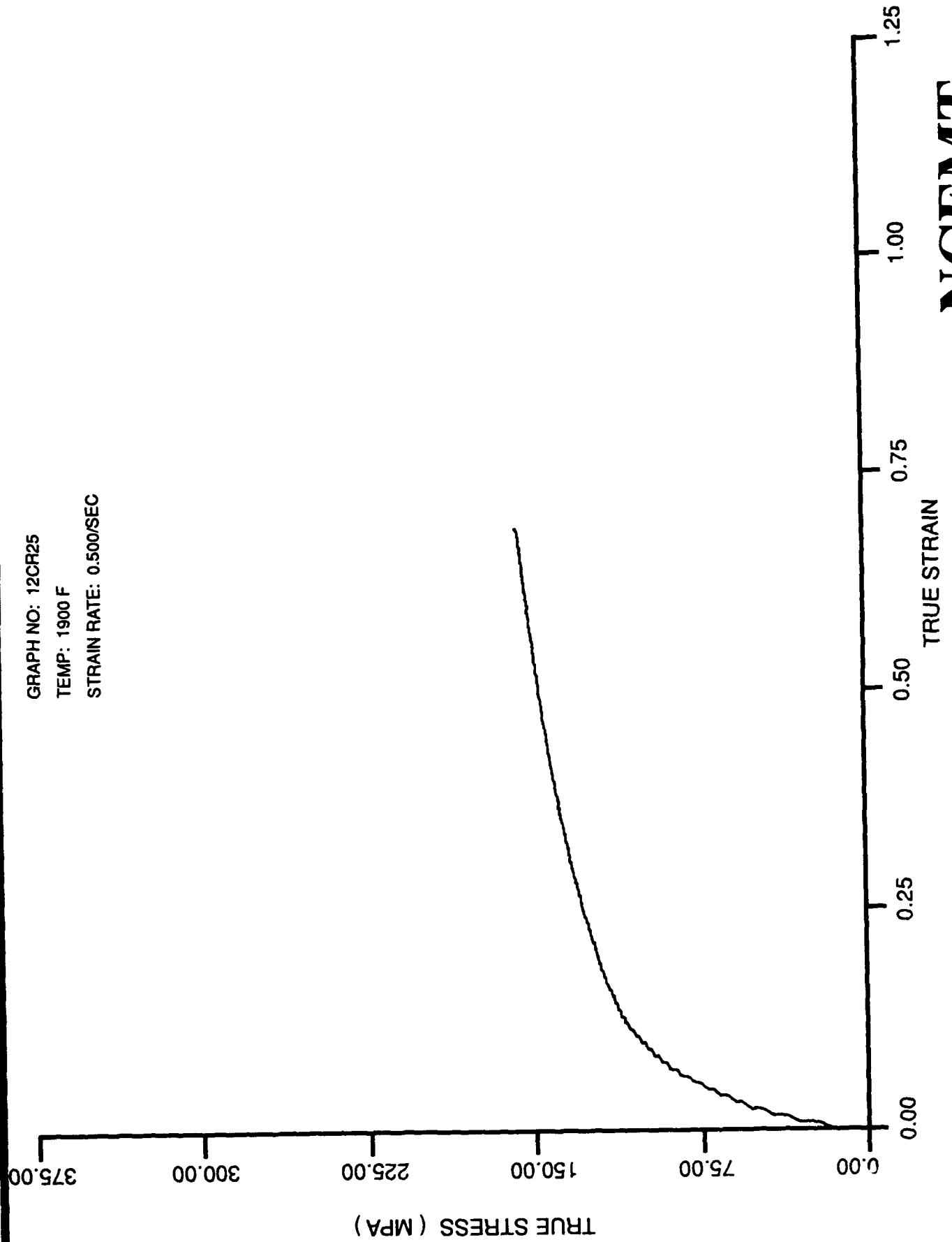


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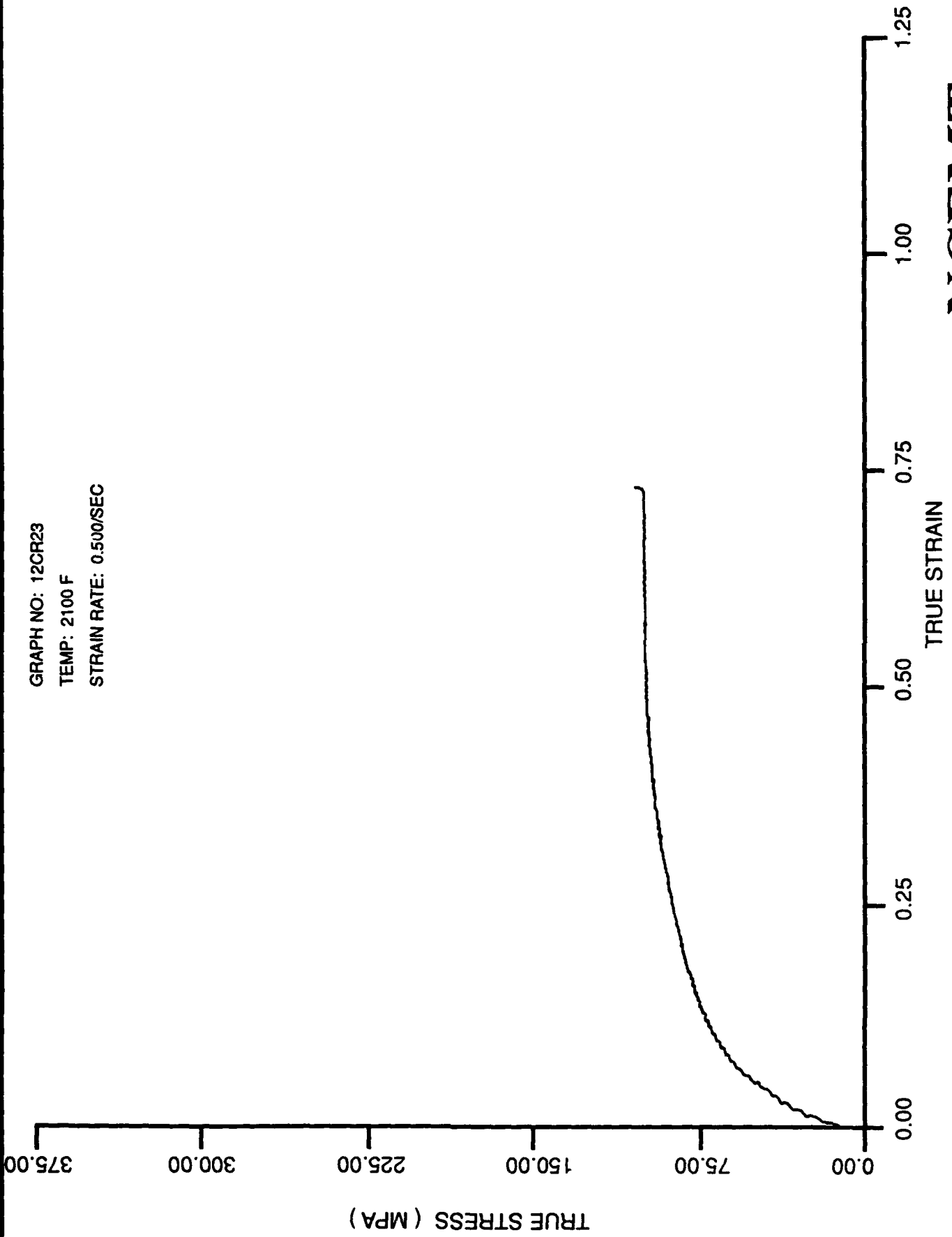


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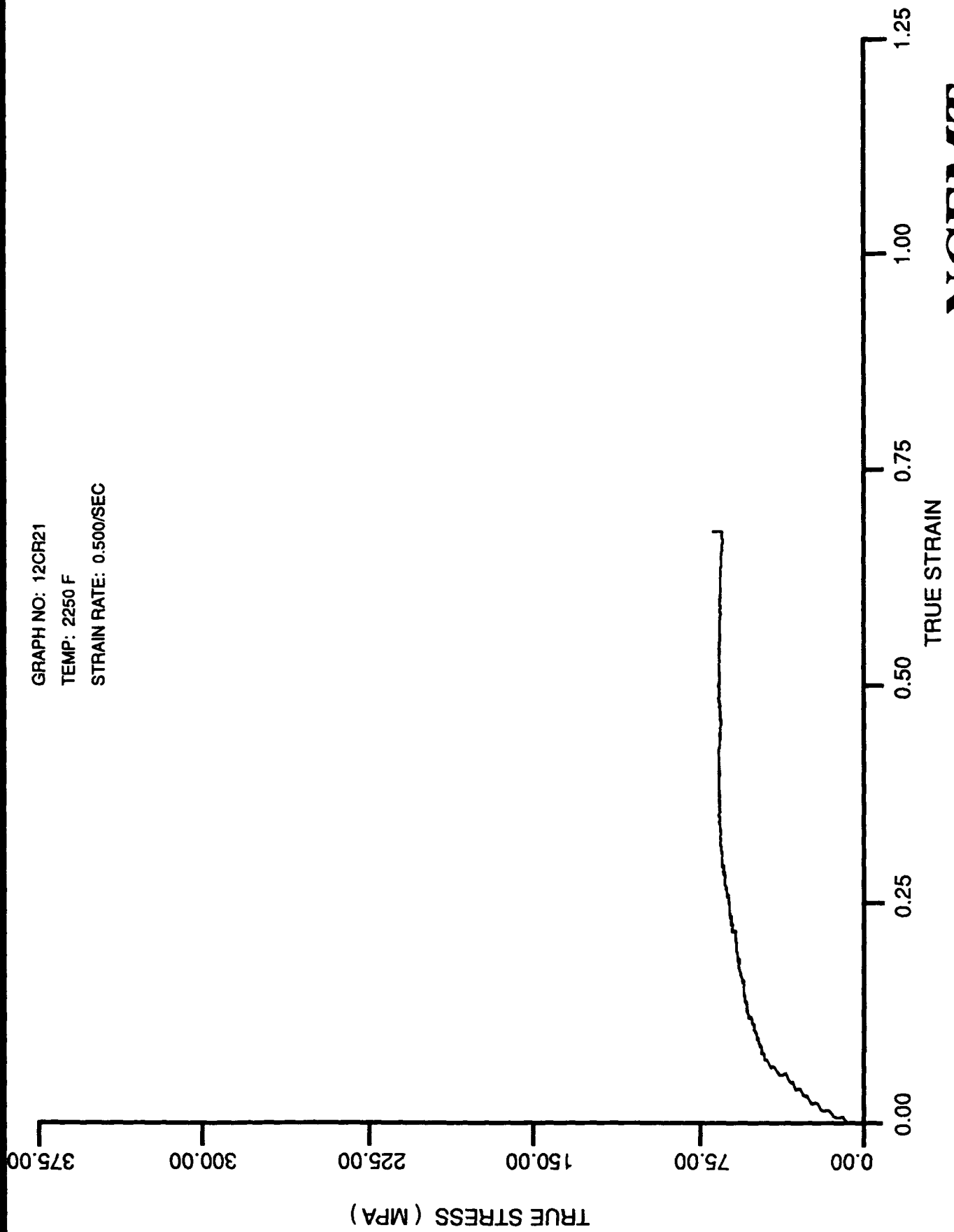
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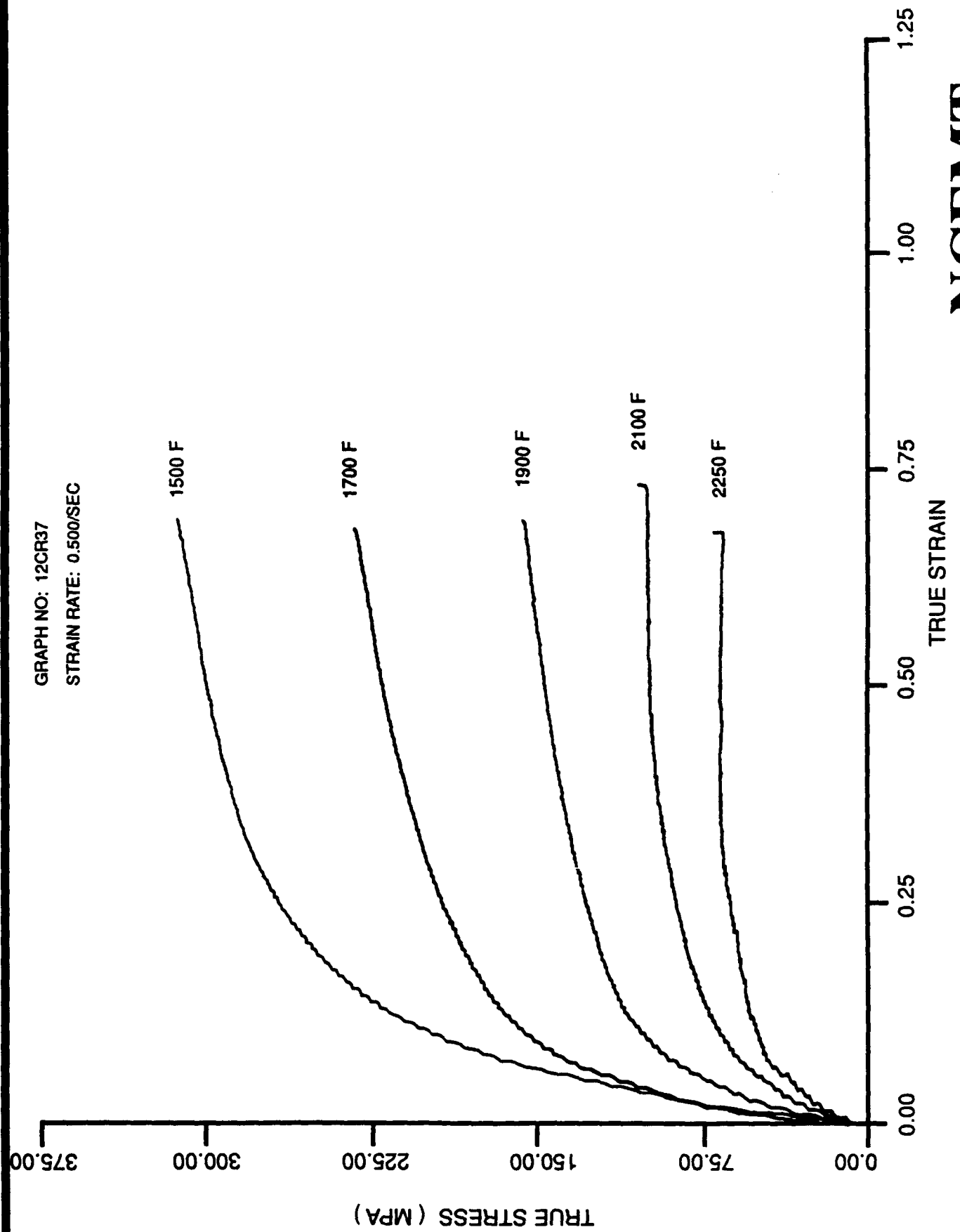


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