

CERTANUM WELLS & RESEARCH CO
FULLER AVENUE

MO 64031

EMERGENCY/INFORMATION TELEPHONE

316/351-8300

~~FORMULA 701A~~

MODE EFFECTIVE 01/09/96

DATE REVIEWED 07/08/94

CGF: 655355

INVOICE: 990023

SDS KEY: 0563740

THOMAS P-V SCHOOL DIST
NORTH EAST WARRIEN
MO 64031

SECTION I - PRODUCT IDENTIFICATION

UNION 12507
NAME CERTANUM 701 5/32"
SYNONYM CERTANUM 701
FORM MILD STEEL ALLOY METALS

SECTION II - HAZARDOUS INGREDIENTS

NAME	CAS NO.	WT %	PER	TLV	STEL	UNITS	LC50, PPH	LD50 MG/KG
IRON	7440-09-05	1-15	1	0.3	3*	MG/M3	N/A	RAT T 9000
W	09004-24-6	1-15	3*	10*	N/A	MG/M3	N/A	N/A
PHOSPHORUS	01312-76-1	1-15	N/A	N/A	N/A	N/A	N/A	RAT T 1300
CHLORINE	7782-50-5	5-20	10*	10*	N/A	MG/M3	N/A	N/A
IRON	7440-09-05	60-80	N/A	N/A	N/A	N/A	N/A	RAT T 30000
IRON	7440-09-05	1-15	10	10	N/A	MG/M3	N/A	N/A
IRON	7440-09-05	1-15	N/A	N/A	N/A	N/A	N/A	N/A

SECTION III - PHYSICAL DATA

FORM (S/C)	N/A	SPECIFIC GRAVITY	N/A
MOISTURE (MM HG)	N/A	VOLATILE VOLUME	N/A
INSOLUBLE IN WATER	N/A	EVAPORATION RATE	N/A
STATE	SOLID	WATER/OIL DIST COEFF	N/A
TEMP (S/C)	N/A	PH	N/A
TEMP (S/C)	N/A	THRESHOLD OCCR, PPH	N/A

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

LOCATION: N/A
NFPA RATING: C.O.C. WHIS: 1.0.0
FIRE PRODUCTS: SEE SECTION VI - HAZARDOUS DECOMPOSITION PRODUCTS
TEMP DEG F/C: N/A
LEL: N/A
UEL: N/A
FLASHING POINT: N/A
TEMP DEG F/C: N/A
FIGHTING PROCEDURES:
STRENGTH SHOULD WEAR SELF-CONTAINED BREATHING EQUIPMENT.
FIRE AND EXPLOSION HAZARDS

TOXIC GASES

SECTION V - HEALTH HAZARD DATA

OF ENTRY, EYE, INHALATION
OF OVEREXPOSURE:

EXPOSURE TO WELDING FUMES MAY RESULT IN DIZZINESS, NAUSEA, OR DRYNESS
Irritation of nose, throat & eyes. Chronic excess welding fumes above
TLV may be hazardous. Prolonged & repeated inhalation may be harmful.
Respiratory system. Some exposures or compounds of manganese are muta-
gen suspected potential carcinogens in experimental animals.
Suspected carcinogen - or > 0.1%. NO
First Aid Procedures:

Immediately flush with plenty of water for 15 min. & call physician.
Wash thoroughly with plenty of water & soap. Inhalation: If affected,
move to fresh air. Administer oxygen & call physician. Ingestion: Acci-
dents are unlikely. If ingested, call a physician immediately.

SECTION VI - REACTIVITY DATA

Reactivity Conditions to Avoid:
Stability (Materials to Avoid): NO
Hazardous Decomposition Products:

Fumes & gases from welding & high temperature cutting cannot be classified
because the composition & quantity of both depend on the alloy being welded,
process, procedures, & electrodes used. The constituents of the fume may
be different from the ingredients listed in Section 2, & may include particles
containing iron, manganese, silicon, chromium, nickel, or other amorphous glass.
Gases may include carbon monoxide, ozone, metal oxides, or metal fluorides.
Following OSHA exposure limits apply to those fumes & gases which may be
encountered in the welding or high temperature cutting environment:

Substance	PEL	TLV	Substance	PEL	TLV
Welding Fume (AL)	5.0	5.0	Manganese Fume (MN)	1.0	1.0
CO Monoxide (CO)	50.0	29.0	Molybdenum (MO)	5.0	5.0
Carbon Dioxide (CO2)	0.1%	0.05	Nickel (NI)	0.1	0.1
Al Fume	0.05	0.02	Nitrogen Dioxide (NO2)	0.1	0.1
Cr Fume (CR)	0.1	0.2	Ozone (O3)	0.2	0.2
Fluorides (AS F)	2.5	2.5	Welding Fumes (MDC)	5.0	5.0
Hydrogen Fluoride (AS HF)	10.0	5.0			

Atomic Polymerization: NL

SECTION VII - SPILL OR LEAK PROCEDURES

See IN. SARA Title III §302, NO §304, CERCLA NO §311, 1980
To be taken in case material is released or spilled
Contain & pick up waste materials. Put in a sealed approved container.
Cleanup Method:
Clean up in accordance with federal, state & local regulations.

CONTINUED ON NEXT PAGE

SECTION VIII - SAFE HANDLING AND PROTECTION INFORMATION

ATTENTION-LOCAL: REQUIRED
 MECHANICAL: REQUIRED
 ACTIVE GLOVES: WELDERS PROTECTIVE GLOVES EYE PROTECTION: (SEE BELOW)
 PROTECTION: FACE SHIELD AND COLORED ABSORPTIVE LENS.
 WELDING LEATHER APRON, SLEEVES, AND LEGGINGS
 WELDED LENS: H9746: NO
 WELDED LENS: F01: NO
 VENTILATION: NO
 SYNERGISTIC AGENTS: NO

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING.
 FLAME, & FLAME MAY BE A SOURCE OF IGNITION OF COMBUSTIBLE MATERIALS
 ONLY IN WELL VENTILATED AREAS DO NOT BREATHE DUSTS. IF VENTILATION IS
 INADEQUATE, WEAR APPROVED RESPIRATORY EQUIPMENT. AVOID PROLONGED CONTACT
 WITH SKIN. WASH THOROUGHLY AFTER USING. IN CASE OF ACCIDENT OR ILLNESS,
 CONSULT PHYSICIAN IMMEDIATELY. SHOW LABEL OR MSDS.
 PRECAUTIONS:
 OUT OF REACH OF CHILDREN. KEEP ONLY IN ORIGINAL LABELED CONTAINERS
 READ AND FOLLOW DIRECTIONS ON PRODUCT LABEL. ADDITIONAL TECHNICAL
 SHEETS AND/OR MATERIAL SAFETY DATA SHEETS (MSDS) ARE AVAILABLE UPON
 REQUEST. FOR PROFESSIONAL AND INDUSTRIAL USE ONLY.

ABBREVIATIONS AND NOTATIONS

1=100% IN HAZARDOUS TITLE III SECTION 313. 2=NON-HAZARDOUS INGREDIENT AMONG THE
 10 MOST PREDOMINANT SUBSTANCES. +=CONTAINS ENCAPSULATED SILICA-CRYSTALLINE.
 1. PRODUCT USAGE SHOULD NOT RESULT IN RESPIRABLE DUST THAT WOULD BE
 HARMFUL TO THE RESPIRATORY SYSTEM. N/A=NOT AVAILABLE OR APPLICABLE. +=IF
 AS DUST, DUST OR FUMES. C=CELLING LIMIT. S=SKIN DESIGNATION: H=HUMAN
 TOXICITY. G=GUINEA PIG; M=MICRO; I=INGESTION; A=SKIN ABSORPTION
 NO=NO TOXICITY EFFECT. NO=NO EFFECT. PEL=OSHA PERMISSIBLE EXPOSURE
 LIMIT. STEL=SHORT TERM EXPOSURE LIMIT.

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DATE EFFECTIVE 01/09/96
DATE REVIEWED 01/09/94
COF 605353
INVOICE: 990023
BLS KEY: 0392740

SECTION I - PRODUCT IDENTIFICATION

NAME: 12804
SERIAL NUMBER: 1/8"
DATE: 01/09/96
CERTIFICATE NO:
MILD STEEL ALLOY METALS

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	CAS NO	WT %	REL	TLV	STEL	UNITS	LC50	PPM	LD50	NO/AS
IRON	7440-08-6	1-15	1	0.2	3*	MG/M3	N/A		RAT	1000
FE	7440-08-6	1-15	3*	10*	N/A	MG/M3	N/A		N/A	
IRON SILICATE	1312-76-1	1-15	N/A	N/A	N/A	MG/M3	N/A		RAT	1000
IRON OXIDE	7440-08-6	5-20	10*	10*	N/A	MG/M3	N/A		N/A	
IRON	7440-08-6	60-80	N/A	N/A	N/A	MG/M3	N/A		RAT	1000
IRON	7440-08-6	1-15	10	10	N/A	MG/M3	N/A		N/A	
IRON	7440-08-6	1-15	N/A	N/A	N/A	MG/M3	N/A		N/A	

SECTION III - PHYSICAL DATA

APPEARANCE: N/A
SPECIFIC GRAVITY: N/A
VOLATILE VOLUME: N/A
EVAPORATION RATE: N/A
WATER/DIL DIST COEFF: N/A
PH: N/A
THRESHOLD OVER: PPM: N/A

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

CAUTION: N/A
NFPA RATING: 0, 0, 0
HMTS: 1, 0, 0
PRODUCTS: SEE SECTION VI - HAZARDOUS DECOMPOSITION PRODUCTS
LEL: N/A
UEL: N/A
FLASHING MEDIA: N/A
FIRE FIGHTING PROCEDURES:
FIRE SHOULD WEAR SELF-CONTAINED BREATHING EQUIPMENT
DO NOT EXTINGUISH

SECTION V - HEALTH HAZARD DATA

OF ENTRY: EYE, INHALATION
OF EXPOSURE

EXPOSURE TO WELDING FUMES MAY RESULT IN DIZZINESS, NAUSEA, OR DRYNESS
OF NOSE, THROAT & EYES. CHRONIC EXCESS WELDING FUMES ABOVE
1000 MAY BE HAZARDOUS. PROLONGED & REPEATED INHALATION MAY BE HARMFUL
TO RESPIRATORY SYSTEM. SOME EXPOSURES OR COMPOUNDS OF MANGANESE ARE MUTA-
GENIC SUSPECTED POTENTIAL CARCINOGENS IN EXPERIMENTAL ANIMALS.

TESTED CARCINOGEN - OR D.O. 117-10

WELDING FIRST AID PROCEDURES.

IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR 15 MIN. & CALL PHYSICIAN
IF EYE. THOROUGHLY WITH PLENTY OF WATER & SOAP. INHALATION: IF AFFECTED,
FRESH AIR, ADMINISTER OXYGEN & CALL PHYSICIAN. INGESTION: ACCI-
DENTATION IS UNLIKELY. IF INGESTED, CALL A PHYSICIAN IMMEDIATELY

SECTION VI - REACTIVITY DATA

CONDITIONS TO AVOID
REACTIVITY (MATERIALS TO AVOID). NO
DECOMPOSITION PRODUCTS:

FUMES FROM WELDING & HIGH TEMPERATURE CUTTING CANNOT BE CLASSIFIED
BY COMPOSITION & QUANTITY OF BOTH DEPEND ON THE ALLOY BEING WELDED,
PROCESS, PROCEDURES, & ELECTRODES USED. THE CONSTITUENTS OF THE FUME MAY
VARY FROM THE INGREDIENTS LISTED IN SECTION 2, & MAY INCLUDE PARTICLES
OF IRON, MANGANESE, SILICON, CHROMIUM, NICKEL, OR OTHER AMORPHOUS GLASS.
FUMES MAY INCLUDE CARBON MONOXIDE, OZONE, METAL OXIDES, OR METAL FLUORIDES.
WARNING: NO/10 EXPOSURE LIMITS APPLY TO THOSE FUMES & GASES WHICH MAY BE
IN WELDING OR HIGH TEMPERATURE CUTTING ENVIRONMENT

HAZID	REL	TLV	SUBSTANCE	REL	TLV
WELD FUME (WEL)	5.0	5.0	MANGANESE FUME (MF)	1.0	1.0
CHROMIUM (CC)	40.0	29.0	MOLYBDENUM (MO)	5.0	5.0
CO (CORROSION/PPHM)	0.01	0.05	NICKEL (NI)	0.1	0.1
WEL	0.05	0.02	NITROGEN DIOXIDE (NO2)	0.18	5.0
WEL (TU)	0.1	0.2	OZONE (O3)	0.2	0.2
WEL (AS R)	2.0	2.5	WELDING FUMES (WFC)	5.0	5.0
WEL FUMES (AS R)	10.0	5.0			

WELDING SPRAYIZATION: NO

SECTION VII - SPILL OR LEAK PROCEDURES

DATA FILE 111; H002: NO H004, CERCLA: NO H010: YES

BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

WEL PICK UP WASTE MATERIALS PUT IN A SEALED APPROVED CONTAINER.

WEL METHOD

WEL METHOD WITH FEDERAL, STATE & LOCAL REG. ATTORNS

WEL METHOD WITH FEDERAL, STATE & LOCAL REG. ATTORNS

SECTION VII - SAFE HANDLING AND PROTECTION INFORMATION

NON-LOCAL: REQUIRED
 MECHANICAL: REQUIRED
 SPECIAL WELDERS: ANSI 249.1
 OTHER: NRMIS CODE: D2A
 FIRE: OILY. WEAR PROTECTIVE GLOVES EYE PROTECTION: (SEE BELOW)
 SKIN: IN USE
 PROTECTION: FACE SHIELD AND COLORED ABSORPTIVE LENS.
 WE LEATHER APRON, SLEEVES, AND LEGGINGS
 RATED LENS: N/A
 RATED LENS: N/A
 RATED LENS: N/A
 SYNERGISTIC AGENTS: NO

SECTION IX - SPECIAL PRECAUTIONS

CAUTIONS TO BE TAKEN IN HANDLING AND STORING
 WARM & FLAME MAY BE A SOURCE OF IGNITION OF COMBUSTIBLE MATERIALS
 ONLY IN WELL VENTILATED AREAS. DO NOT BREATHE DUSTS. IF VENTILATION IS
 INSUFFICIENT, WEAR APPROVED RESPIRATORY EQUIPMENT. AVOID PROLONGED CONTACT
 WITH SKIN. WASH THOROUGHLY AFTER USING. IN CASE OF ACCIDENT OR ILLNESS,
 CONSULT PHYSICIAN IMMEDIATELY. SHOW LABEL OR MSDS
 PRECAUTIONS
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 MOST PREDOMINANT SUBSTANCES; + = CONTAINS ENCAPSULATED SILICA-CRYSTALLINE
 SIL. SPECIAL USAGE SHOULD NOT RESULT IN RESPIRABLE DUST THAT WOULD BE
 HARMFUL TO THE RESPIRATORY SYSTEM; N/A = NOT AVAILABLE OR APPLICABLE; * = IF
 * = AN EYE, NIST OR DWE. C = CEILING LIMIT. S = SKIN DESIGNATION; M = HUMAN
 PASSAGE; O = ORAL; P = PIGS; HIC = NICE; I = INGESTION; A = SKIN ABSORPTION;
 * = UNDESIRABLE EFFECT; NO = NO EFFECT; PEL = OSHA PERMISSIBLE EXPOSURE
 * = A1616 THRESHOLD LIMIT VALUE, STEL = SHORT TERM EXPOSURE LIMIT.

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