

ANCHOR BOLTS

MATERIAL SAFETY DATA SHEET STEEL PRODUCTS

STEEL PRODUCTS – Annex 1 ORIGINAL ISSUE DATE: 11/84 REVISED: 1/90

TYPICAL LEVELS OF TRACE OR RESIDUAL ELEMENTS IN STEELS

All steel products are alloys, which consist primarily of Iron (generally 95%). However, other elements which are either added intentionally or present as contaminants or residuals may also occur in these products at trace or low level concentrations (generally < 1.0%). These elements may include the following:

ALLOYING and RESIDUAL ELEMENTS		C.A.S. No.	%WWT	EXPOSURE LIMITS	
CHEMICAL	SYMBOL			OSHA PEL	ACGIH TLV
Aluminum	Al	7429-90-5	0.01-0.06	total 15.0mg/M3 respirable5.0mg/M3	fume5.0mg/M3
Antimony	Sb	7440-36-0	< 0.005	0.5 mg/M3	0.5mg/M3
1) Arsenic	As	7440-38-2	0.002-0.009	0.01mg/M3	0.2mg/M3
Boron	B	1303-86-2	0.0002-0.004	total 10.0mg/M3 respirable5.0mg/M3	10.0mg/M3
Calcium	Ca	1305-78-8	0.0001-0.002		2.0mg/M3
Carbon	C	7440-44-0	0.05-0.84	5.0mg/M3	NONE
(1,2)Chromium	Cr	7740-47-3	0.06-0.25	NONE	0.5mg/M3
Cobalt	Co	7440-48-4	< 0.011	1.0 mg/M3	0.05mg/M3
Copper	Cu	7440-50-8	0.13-.35	05mg/M3	fume 0.2 mg/M3
Lead	Pb	7439-92-1	< 0.002	fume 0.1 mg/M3	0.15mg/M3
Manganese	Mn	7439-96-5	0.4-1.2	0.05 mg/M3	fume 1.0mg/M3
(2)Molybdenum	Mo	7439-98-7	0.01-0.06	fume 1.0 mg/M3 total 10.0 mg/M3	10.0mg/M3
(1)Nickel	Ni	7440-02-0	0.06-0.13	respirable5.0mg/M3	1.0mg/M3
Phosphorous	P	7723-14-0	0.008-0.025	1.0mg/M3	0.1mg/M3
Silicon	Si	7440-21-3	0.15-0.30	0.1mg/M3 total 10.0mg/M3	10.0mg/M3
Sulfur	S	7446-09-5	0.004-0.03	respirable5.0mg/M3	SO2 5.0mg/M3
Tin	Sn	7440-31-5	0.009-0.016	SO2 5.0mg/M3	2.0mg/M3
Titanium	Ti	13463-67-7	0.003-0.04	2.0mg/M3 total 10.0mg/M3	10.0mg/M3
Vanadium	V	1314-62-1	0.001-0.03	respirable5.0mg/M3	fume 0.05mg/M3

1. Recognized to have human carcinogenic or co-carcinogenic potential; included on IARC & NTP listings.
2. Except Cr-Mo Rail. Typical Cr runs 0.5%-0.7% and Mo runs 0.14%-0.19%.

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STEEL PRODUCTS

CF&I STEEL CORPORATION
SEAMLESS PIPE COATINGS – ANNEX 2 ORIGINAL ISSUE DATE:
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RUST PREVENTATIVES & PROTECTIVE COATINGS
FOR SEAMLESS TUBING

API High Pressure Modified Thread Compound
RSR Corporation
Dallas, TX

C-134 Pipe Coating Oil
Peterson Paint Co.
Pueblo, CO

Kendex OCTG Orange Corrosion Inhibitor
Witco Chemical
Bradford, PA