



## MINIMISER<sup>®</sup> 304/304L/316/316L

### Stainless Steel: Austenitic

(UNS S304300/S30403/S31600/S31603)

#### GENERAL PROPERTIES

MINIMISER<sup>®</sup> material is an improved machinability version of 304, 304L, 316 and 316L stainless steel plate which satisfies the common specifications for these grades. The purpose of MINIMISER alloy is to facilitate drilling, machining and cutting where production of final product entails considerable amounts of such processing. Reduced time for these operations and better tool life decreases the fabricator's and end user's production costs.

The improved machinability is accomplished primarily by a controlled sulfur addition, as well as modification of other compositional and processing parameters which yield a product that the machine shop will like and request.

MINIMISER stainless steel is easy on cutting tools due to reduced oxide content. The MINIMISER material allows lower machining costs due to reduced machining time compared with standard versions of 304/304L/316/316L.

The parameters which affect machinability are closely controlled so that the product is consistent from plate to plate and heat to heat.

The aim sulfur content is 0.025% against the 0.030% maximum of ASTM A240. This slightly higher than normal sulfur content may have an adverse effect on polished surface quality due to the presence of sulfide particles. The sulfide particles in MINIMISER alloy will interfere with vacuum seal capability on a polished surface, particularly following deep machining. A major application for the product is tube sheets.

Other detailed physical property data applicable to these two alloys can be found in the Technical Data Sheets for Types 304, 304L and Types 316, 316L.



## Technical Data Sheet

### TYPICAL COMPOSITION

MINIMISER 304/304L is dual certifiable with the following typical composition:

Element	Percentage
C	0.01
Mn	1.70
P	0.030
S	0.025
Si	0.60
Ni	9.50
Cr	18.25
N	0.06
Fe	Balance

MINIMISER 316/316L is dual certifiable with the following typical composition:

Element	Percentage
C	0.01
Mn	1.70
P	0.030
S	0.025
Si	0.60
Ni	10.15
Cr	16.25
Mo	2.50
N	0.05
Fe	Balance