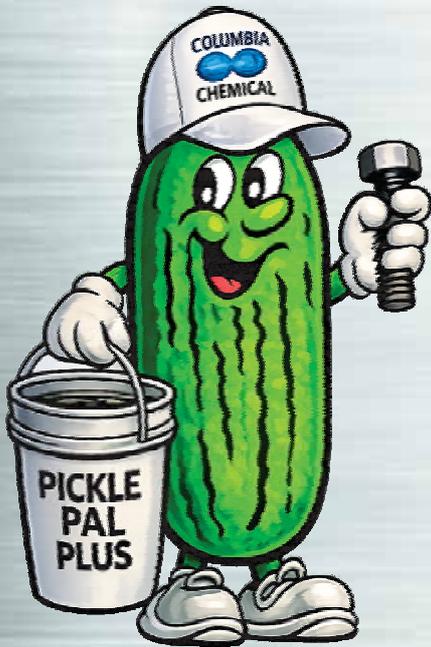


# PICKLE PAL PLUS

## Non-Hazardous Inhibitor / Cleaning Aid For Hydrochloric Acid and Sulfuric Acid Pickle Baths



### Bright, Clean Steel Surfaces

Promotes uniform acid action while protecting the base metal, producing cleaner substrates.



### Prevents Etching & Over-Pickling

Advanced inhibition technology controls acid attack on steel, minimizing surface damage.



### Eliminates Smut Formation & Blistering

Reduces carbon smut on high-carbon and heat-treated parts, helping prevent blistering.



### Solubilizes Oils dragged into the pickle

Helps to emulsify oils from drag-in or residual oil remaining on the parts after the cleaning stages.



### Foam Blanket Technology - Prevents Acid Fumes & Spray

Improves working environment for operators and reduces plant corrosion.



### Controls Hydrogen Embrittlement Risk

Inhibits hydrogen build-up in parts which can occur during the pickling process.



### Extends Pickle Bath Life - Reduces Acid Consumption

Controls iron buildup reducing dump frequency and lowers operating costs.

WITH  
PICKLE PAL PLUS



WITHOUT  
PICKLE PAL PLUS



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In association with

**COLUMBIA®**



**CHEMICAL**

Simplifying Surface Finishing®

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## FEATURES AND BENEFITS

### ***CONSOL PICKLE PAL PLUS***

***Non-Hazardous Inhibitor/Cleaning Aid For Hydrochloric Acid and Sulfuric Acid Pickle Baths***

**Brought to India in association with Columbia Chemical Corpn., - U.S.A., World Leaders in Simplifying Surface Finishing**

- Inhibits the attack of the acid on the steel substrate leading to bright, clean steel parts maximizing subsequent plating quality and greatly extends the life of a pickle bath. Prevents etching of parts from over-pickling.
- Eliminates smut formation with high carbon or carbo-nitrided steel and improves pickle's ability to remove scale.
- Is a cure for pickle-related blistering and is extremely beneficial when pickling heat treated parts as it eliminates blistering by conditioning the substrate surface.
- Inhibits hydrogen build-up in parts which can occur during the pickling process.
- Helps to solubilize oils dragged into the pickle as well as any oils remaining on the parts after the cleaning stages.
- Reduces fumes and spray from pickle tanks.
- Greatly reduces soluble iron build-up in the pickle, significantly minimizing iron contamination of plating baths.
- Is compatible with plating baths and waste treatment processes.

### ***OPERATING INSTRUCTIONS***

	<b>Range</b>	<b>Optimum</b>
<b>Concentrated Hydrochloric Acid:</b>	200 ~ 500 ml/l	300 ml/l
<b>Consol Pickle Pal Plus:</b>	5 ~ 20 ml/l	10 ml/l
<b>Immersion Time:</b>	2 ~ 10 minutes	4 minutes
<b>Temperature:</b>	15° ~ 30° C	23° C

**Note:** For weaker pickle you may use lower concentrations of *Consol Pickle Pal Plus*.

**For High Carbon, heat treated, or highly oily steels you may use higher concentrations of *Consol Pickle Pal Plus*.**

**Attention:** This sheet is only meant to provide Features and Benefits of the process mentioned. For detailed Usage, Please refer the product Technical Data Sheet. For Safety, handling and Chemical information please refer the Safety Data Sheet. These can be provided through a *Consolidated Metal Finishing Pvt. Ltd.* representatives or requesting us for the same by email.