



**VMS PHARMATECH**  
Manufacturer & Exporter  
of Dies & Punches

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# KNOW US

The **VMS PHARMATECH** was founded by a team of tooling experts.

The company is engaged in the Design, Development, Manufacturing, and supply of Quality Tablet Tooling & its Accessories. We have the expertise and facilities to meet the growing demand of the tableting industry for standard / customized toolings for a range of applications.

Our wide range of products includes A to Z solutions for all your tableting needs. Our commitment towards developing ground-breaking solutions through R&D in areas such as metallurgy, punch coating, boosting productivity (by our multi-tip solutions), and Quality Assurance Measures has been successfully adopted by customers worldwide. We believe that every penny spent in research and development is a penny well spent.

We have been supplying our tooling to various sectors like Pharmaceutical, Nutraceutical, Confectionery, Veterinary, Cosmetic & Ceramic Industries by marketing it in domestic and international markets.

At **VMS PHARMATECH** we not only manufacture tablet toolings of unparalleled quality but also provide support equipment to help maintain tablet quality. Our headquarters is strategically located in one of the finest progressive industrial societies. VMS Pharmatech campus includes Administration, Manufacturing, Testing, Training, and R&D facilities specifically designed to inform our customers about our Development, Growth & Reliability.

Tablet Compression Tooling has evolved over a century, with advancements like Special Purpose Tool Steels, Advanced Coating Solutions, and Multiple Tip Tooling to resolve tableting issues and boost productivity, making a revolutionary impact in the industry.

**VMS PHARMATECH** focuses on enhancing user experiences through cutting-edge technology and automation. They prioritize user satisfaction, meet industry demands, and seek innovative solutions. This approach has led to a strong market presence and a satisfied global customer base. The company is committed to continuous learning, evolution, and innovation.

The categories we make tooling's for is undefined as we are equipped to manufacture any customized tooling required by the client to cater their needs, but here are a few commonly made tooling types :

- ✓ **EURO STANDARD TOOLING ( ` BB', 'B', 'DB' & 'D' TYPE) • TSM**  
**STANDARD TOOLING ( ` BB', 'B', 'DB' & 'D' TYPE )**
- ✓ **FETTE TOOLING including SEGMENT DIES**
- ✓ **KILIAN TOOLING**
- ✓ **JAPANESE STANDARD TOOLING**
- ✓ **BOLUS TYPE TOOLS**
- ✓ **MULTI TIP TYPE TOOLING CUP-TYPE**
- ✓ **MULTI-TIP TYPE TOOLING MONOBLOCK TYPE**
- ✓ **MICRO TIP TYPE TOOLS**
- ✓ **SNAP-TYPE TOOLS**
- ✓ **3D TIP TYPE TOOLS**



**For tool steel toughness, resistance to wear and corrosion, strength and resistance to distortion and warping during heat treatment are its most important properties. These properties are the condition under which it is manufactured. For purpose of comparison, the steels used to manufacture tablet press tooling have been grouped in three categories :**

**O1 Steel :** It is a General Purpose Steel which is a Oil Hardened Non Shrinking Steel which has High Hardenability and is commonly used for Blanking & Stamping Punches.

**S7 Steel :** Is a tool steel grade with exceptional impact resistance plus the highest hardenability of shock resisting grade of Tool Steel due to which is commonly used in Tablet Compression Punches for its heavy load bearing capacity.

**D3 Steel :** Is a Hot Die Steel and comes under the Category of High Carbon High Chromium (H.C.H.C.) Steel which has Great Resistance to Wear due to the percentage of Chromium in its structure for which it is also the most preferred choice for Tableting Dies.

**D2 Steel :** It comes under High Carbon High Chromium (H.C.H.C.) Steel category which also has Excellent Wear Resistance & Abrasion Resistance and so is generally used for Abrasive Tablet Compression.

**440C Steel :** Is a Stainless Steel type with High Carbon and High Chromium percentage of Elements which also has Excellent Hardenability and can go upto 60 HRC max. This category of Steel is used to Manufacture Small Tips for Multi Tip Tooling's.

**A2 Steel :** Is a Cold work Steel and is a Air Hardening Steel which provides High Hardness with good dimensional stability which also averages better Wear Resistance.

**S5 Steel :** Is a primarily a Oil Hardening Grade Steel which was developed for Better Resistance to Shock that has Good Elemental combination of Manganese-Silicon-Molybdenum.

**408 Steel :** Is a Stainless Steel which is a Ferritic Steel that offers good mechanical properties which is Resistant to Corrosion and prevents rust corrosion cracking.

**S1 Steel :** Is a Cold work Steel which has Tungsten in its Elements due to which it has Greater Toughness and Impact Resistance also can obtain High Hardness.

**K340 Steel :** Is a Premium Cold work Steel which has High Yield Strength and good Toughness properties which is suitable for Chipping & Premature Wear issues also has Excellent Compressive strength.

**PK5 Steel :** It is a Premium Steel with Chromium content of upto 16% to 18% which helps in obtaining least Ra value on the surface giving the surface a mirror finish which make it very less Coefficient to friction.

**N690 Steel :** Is a Premium Steel with Chromium content similar to the PK5 Steel with the addition of Cobalt in it which bonds the molecular structure uniformly giving it Greater Surface finish and Longer Durability.

## CHEMICAL COMPOSITION OF TOOL STEELS

CHEMICAL ELEMENT	PERCENTAGE OF CHEMICAL ELEMENTS											
	O1	S7	D3	D2	440C	A2	S5	408	S1	K340	PK5	N690
<b>C</b> CARBON	0.85-1.00	0.45-0.55	2.00-2.35	1.40-1.60	0.95-1.20	0.95-1.05	0.50-0.65	0.40-0.55	0.40-0.55	0.90-1.20	0.40-0.60	0.90-1.20
<b>Mg</b> MANGANESE	1.00-1.40	0.20-0.80	0.00-0.60	0.00-0.60	0.00-1.00	0.00-1.00	0.60-1.00	0.40-0.60	0.10-0.40	0.20-0.50	0.20-0.50	0.20-0.50
<b>Si</b> SILICON	0.10-0.50	0.20-1.00	0.00-0.60	0.00-0.60	0.00-1.00	0.00-0.50	1.75-2.25	0.00-0.30	0.15-1.20	0.60-1.00	0.20-0.50	0.20-0.50
<b>Cr</b> CHROMIUM	0.40-0.70	3.00-3.50	11.0-13.0	11.0-13.0	16.0-18.0	4.75-5.50	0.00-0.35	0.60-0.80	1.00-1.80	7.00-9.00	16.0-18.0	16.0-18.0
<b>V</b> VANADIUM	0.00-0.30	0.00-0.35	0.00-1.00	0.00-1.10		0.15-0.50	0.00-0.35		0.15-0.30	0.15-0.50	0.00-0.20	0.00-0.20
<b>W</b> TUNGSTEN	0.10-0.60		0.00-1.00						1.50-3.00			
<b>Mo</b> MOLYBDNEUM		1.30-1.80		0.70-1.20	0.00-0.75	0.90-1.40	0.20-1.35		0.00-0.50	1.80-2.20	0.90-1.10	0.90-1.10
<b>Ni</b> NICKEL					0.00-0.50			1.50-3.00				
<b>Co</b> COBALT				0.00-1.00								1.20-1.60



Based on the product nature such as - abrasive, corrosive, sticky etc.  
We at **VMS PHARMATECH** recommend various types of coating. As described below :



## CVD Coating

### HCP

A Type of CVD coating which is highly reflective and resistant to Corrosion & Wear also has Very less Coefficient to friction resulting in smoother Compression & Ejection of Tablet, also **this coating comes as a default with ROTEK Compression Punches.**

## 2D Surface Coating

### ENI

A two tone silver goldenish coating which is obtained by deposition of Nickel alloy into the metal surface by a bath and not by electrodes or external electrical charges which allows even surface deposition resulting in a Very Smooth Surface Finish.

## 3D PVD Coating

### HCP+

A uniquely developed coating which is PVD Superior Hard-Chromium Coating which has a very homogeneous structure along with low density of pores with a good Non-Stick property.

### CRN+

Is a Silver Black coating which is Hard and is a Double layer of Chromium Nitride coating on the Punch surface which results in a almost pore free surface which helps in Compression of Abrasive Tablets making it more durable and sustainable in such environment.

### CRX+

Is a Dark Grey coating which along with 2 layers of coating has a 3rd Thick & Dense layer of surface coat which helps further in dealing with Abrasion, Sticking, Wear & Galling also adding up the durability of the Punch with increased service life.

### SPN

Is a Silver Grey coating which is the Best performer against Heavy Sticking & Picking issues due to its Nano structure the surface on which it is applied gets a pore free surface finish and provides a very smooth surface area which is unmatched by any other surface coating.

### MLY

A Mild Silver coating which is a combination coating which is a two layer coating which has a additional surface with anti stick properties which further reduces the effect of formulation sticking on the Punch Face.

### TIN

Is a Golden coating which is Very Hard and due to which it works great against Wear resistance which is also used for both Punch & Die to protect it from Wear & Corrosion.

### CRN

It is a Extremely Hard and inert coating with upto 2X harder then Hard Chrome which performs well in Corrosive environment and in sliding Wear applications. It also has Low Residual Stress and is Low Coefficient to friction.

### CRX

Is a Greyish coating which is specially developed to also work with Abrasion and Sticking at the same time which is also a combination coating which has triple layer protection to give the best results for Sticking & Wear related issues.

### SPN+

Is a Silver Grey coating which is dense thick layer of an already super fine coating which helps in Heavy Sticky Tableting conditions due to its Nano structure it gives the Best surface finish which is uncomparable with any other surface coating.

### DLC

It's called Diamond Like Carbon coating which is Black and is a Nano Composite coating which has a unique property of natural diamond low friction, high hardness and high corrosion resistance which is perfectly suited for most extreme tableting conditions.

Selecting the right coating for your tableting tools is mainly influenced by the raw materials used in tablet. **Our experienced team will be happy to advise you.**

# TOOL COAT

TABLET TOOLINGS  
THAT INSTILL **TRUST.**



Our strong passion for Tooling Technology empowers us to confidently affirm:

**"When prioritizing quality, we stand out  
as the premier choice in India."**

# SATISFIED CLIENTS



## CONTACT US

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