



## SynKos Wax Series

## INTRODUCTION

The SynKos Wax Series is comprised of white, synthetic waxes with unique gelling and texturing capabilities.

SynKos waxes are synthetic hydrocarbon polymers manufactured by GTL (gas-to-liquid) technology from natural gas. They can function like petroleum-based hydrocarbons, while being more consistent and offering a lower cost.

# FORMULATION GUIDELINES

*SynKos Waxes* are used as gelling agents, thickeners, viscosity modifiers, and barriers. They are also used to modify hardness, slip and melting point. These products have compatibility with all cosmetic systems, including; vegetable oils, esters, and low viscosity fluids like cyclomethicone and isododecane. Look for our gel data on the following cosmetic fluids to get the gel that is best for each system.

- ⬡ C12-15 Alkyl Benzoate
- ⬡ Caprylic Capric Triglycerides
- ⬡ Castor Oil
- ⬡ Cyclopentasiloxane
- ⬡ Isododecane
- ⬡ Isononyl Isononanoate
- ⬡ Isopropyl Palmitate
- ⬡ Mineral Oil
- ⬡ Sunflower Oil
- ⬡ Trioctyldodecyl Citrate

## REGULATORY

**INCI Name:** Synthetic Wax

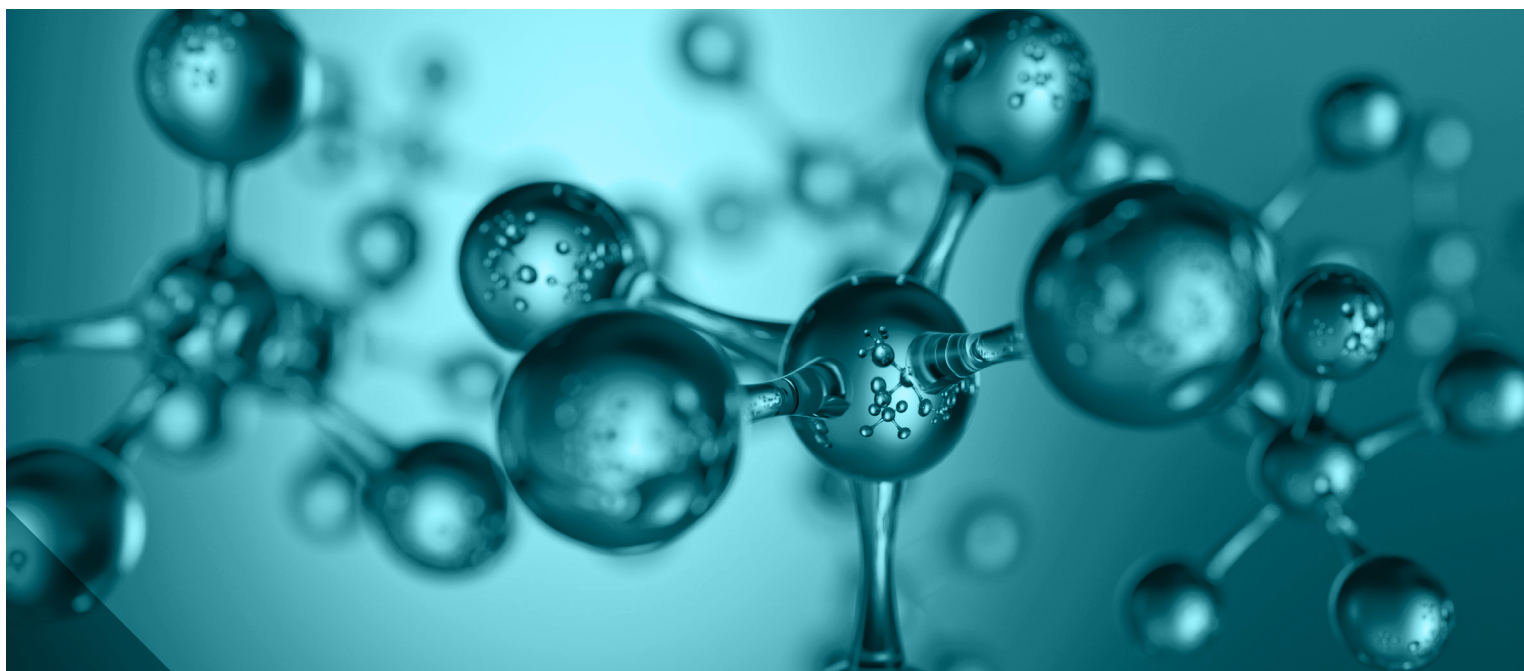
**Manufactured:** Watertown, Connecticut, USA

**Does Not Contain:** BHT, Heavy Metals, or PAH's

Reach Polymer Exempt

Not Restricted by COLIPA Requirements

Not a Mineral Hydrocarbon



# HOW TO CHOOSE

Each SynKos wax has its own chemistry and therefore different gel strengths in cosmetic fluids, esters and oils. They also have distinct melt points. Formulators should analyze the chemistries in their project and review provided gel data. The congeal points of each wax will also help determine which SynKos is right for each formula.

SYNKOS	2030	2040	2050	2060	2065
Generic Melting Point*	50°C	60°C	70°C	80°C	85°C
Increase Pay-off	●	●			
Increase Melt point				●	●
Primary Structurant			●	●	●
Gelling Agent	●	●	●	●	●
Viscosity Builder	●	●	●	●	●
Increased Creaminess	●	●			
Film Former	●	●	●	●	●
Polyethylene Replacement			●	●	●
Petrochemical Replacement**	●	●	●	●	
Slip Aid	●	●	●		

\* Check specifications for range    \*\* Paraffin, Ozokerite, Ceresin & Microcrystalline Waxes

## Product Categories

The SynKos wax series is both compatible and versatile; therefore it can be used in a multitude of formulas including the following:

### Color Cosmetics

- Lipsticks
- Anhydrous Systems
- Lip Balms
- Sticks
- Eyeliner
- Mascara
- Foundation & Concealer
- Multi-Use Products

### Skin Care

- Creams
- AP/DEO
- Lotions
- SPF Products
- Balms
- Emulsions
- Ointments
- Multi-Use Products

### Hair Care

- Styling Products
- Pomades

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# SYNKOS 2030

WAX No. 864 P

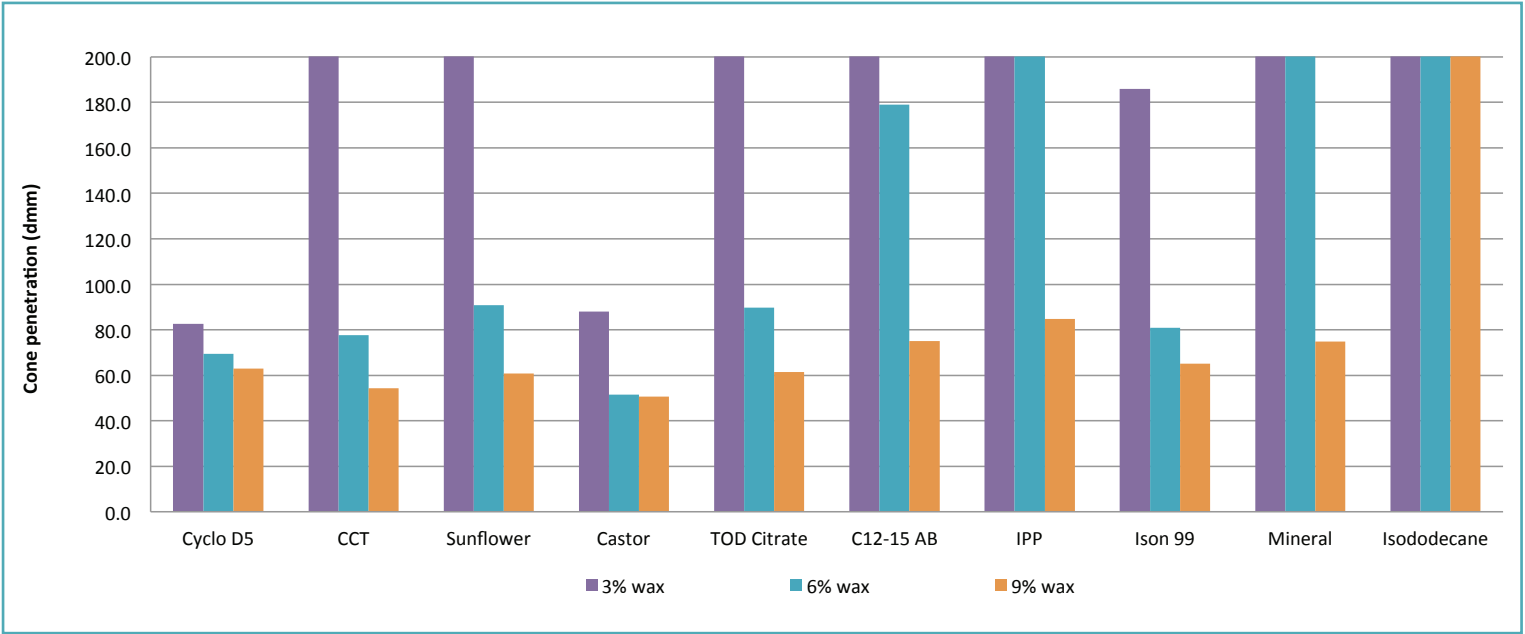
## Benefit Overview

- Creamy Textures
- Petrochemical Replacement
- Viscosity Builder
- Thickener
- High Pay-off
- Slip Aid

## Gel Strength & Congeal Points

Gel data is provided to show the strength of the gel formed and measured via ¼ cone penetration. The lower the cone penetration, the harder the gel structure is. For example, a stick formula could have a penetration reading of 20-50 dmm, while a balm or pot balm would register around 70-140 dmm.

Congeal information is used to understand how the gel solidifies. By combining the gel data with congeal temperature data, formulators can better predict and understand the type of gel and texture they can expect on the bench.



	Cyclo D5	CCT	Sunflower	Castor	TOD Citrate	C12-15 AB	IPP	I.I	Mineral	Isododecane
3% wax	115.5	*	*	127.0	*	*	*	*	*	*
6% wax	128.0	116.0	118.0	138.0	116.0	106.0	*	101.0	*	*
9% wax	141.0	123.0	125.0	145.0	121.0	110.0	105.0	108.0	101.0	*

\* All Congeal Points were tested. Missing data points denotes weak gel or liquid.

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# SYNKOS 2040

WAX No. 888 P

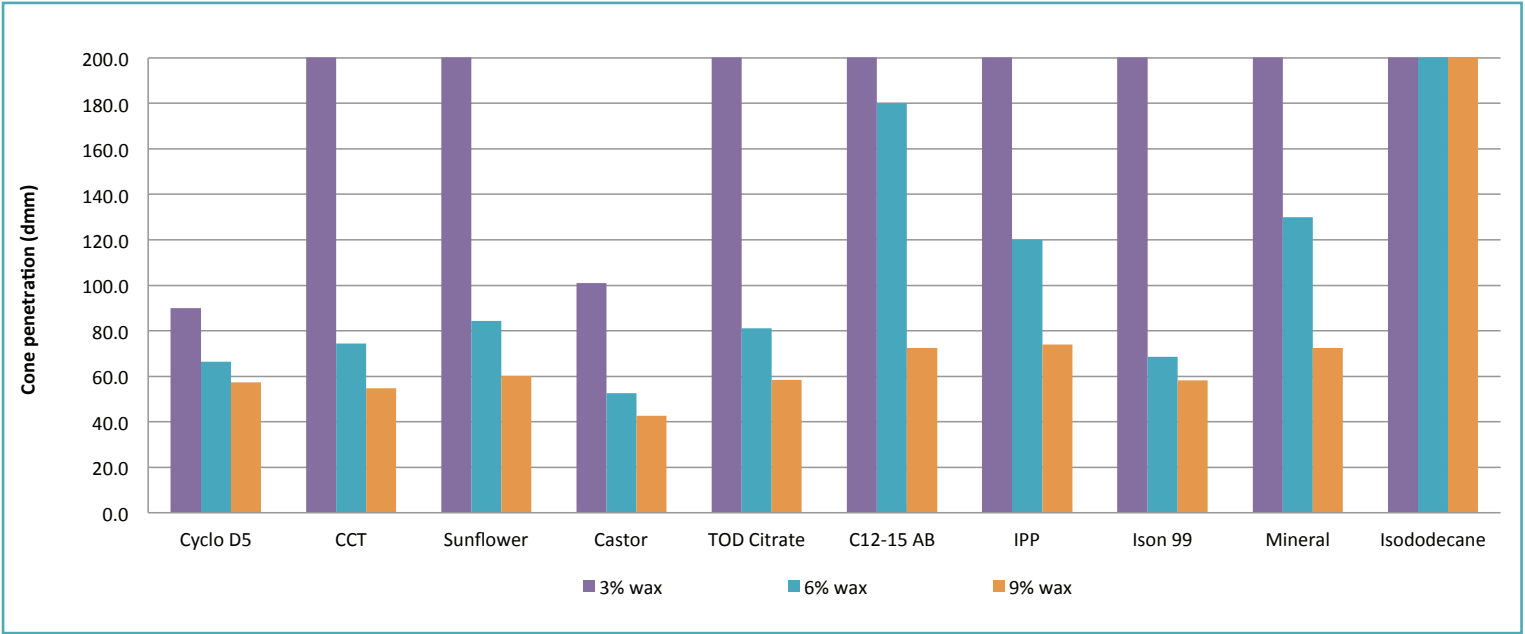
## Benefit Overview

- Creamy Textures
- Petrochemical Replacement
- Viscosity Builder
- Thickener
- High Pay-off
- Slip Aid

## Gel Strength & Congeal Points

Gel data is provided to show the strength of the gel formed and measured via ¼ cone penetration. The lower the cone penetration, the harder the gel structure is. For example, a stick formula could have a penetration reading of 20-50 dmm, while a balm or pot balm would register around 70-140 dmm.

Congeval information is used to understand how the gel solidifies. By combining the gel data with congeal temperature data, formulators can better predict and understand the type of gel and texture they can expect on the bench.



	Cyclo D5	CCT	Sunflower	Castor	TOD Citrate	C12-15 AB	IPP	I.I	Mineral	Isododecane
3% wax	126.0	*	*	135.0	*	*	*	*	*	*
6% wax	131.0	126.0	120.0	144.5	120.0	*	*	108.5	*	*
9% wax	135.0	32.0	140.0	149.0	123.0	116.0	110.5	113.0	107.0	*

\* All Congeal Points were tested. Missing data points denotes weak gel or liquid.

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# SYNKOS 2050

WAX No. 858 P

## Benefit Overview

- Primary Structurant

Gelling Agent

Viscosity Builder

Thickener and Stabilizer
- Film Former

Slip Aid

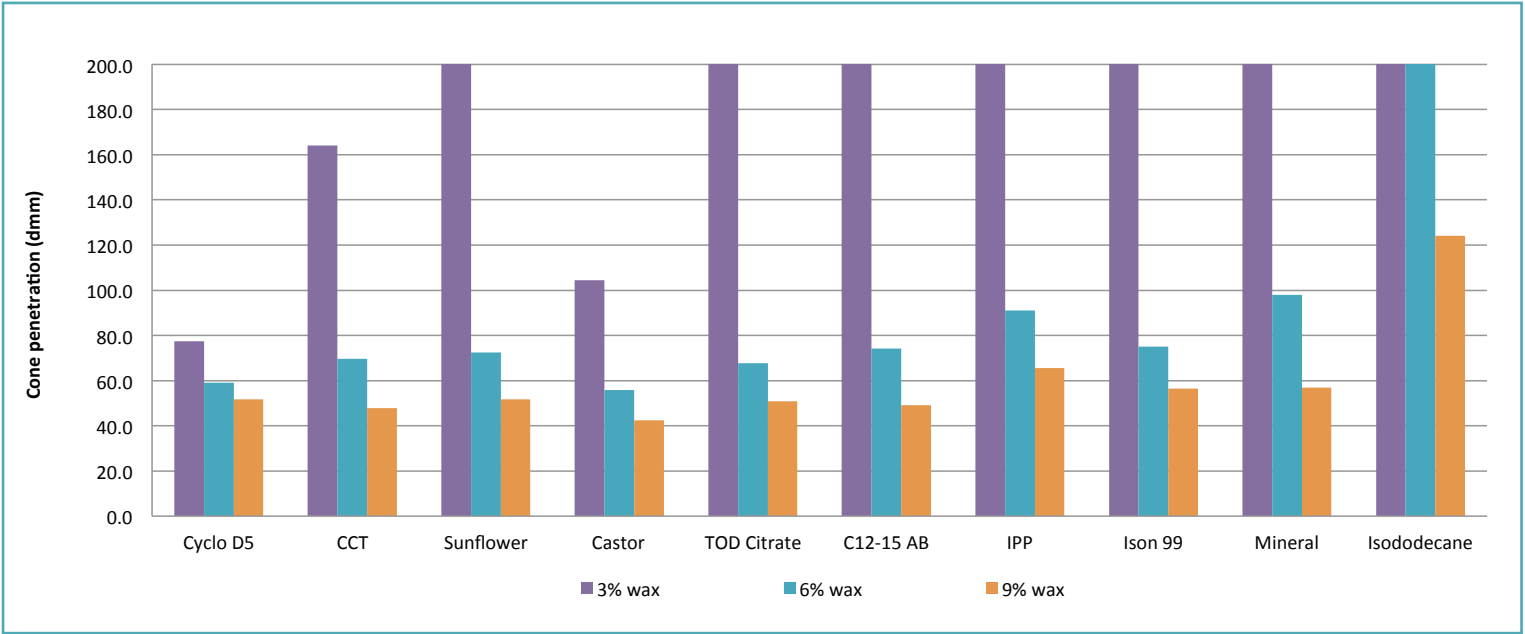
Petrochemical Replacement

Polyethylene Replacement

## Gel Strength & Congeal Points

Gel data is provided to show the strength of the gel formed and measured via ¼ cone penetration. The lower the cone penetration, the harder the gel structure is. For example, a stick formula could have a penetration reading of 20-50 dmm, while a balm or pot balm would register around 70-140 dmm.

Congeval information is used to understand how the gel solidifies. By combining the gel data with congeal temperature data, formulators can better predict and understand the type of gel and texture they can expect on the bench.



	Cyclo D5	CCT	Sunflower	Castor	TOD Citrate	C12-15 AB	IPP	I.I	Mineral	Isododecane
3% wax	131.0	124.5	*	141.0	*	*	*	*	*	*
6% wax	140.0	131.0	129.5	150.0	127.0	118.0	116.5	115.0	109.0	*
9% wax	142.5	137.0	134.0	153.5	134.0	123.0	118.0	121.0	113.0	135.0

\* All Congeal Points were tested. Missing data points denotes weak gel or liquid.

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# SYNKOS 2060

WAX No. 883 P

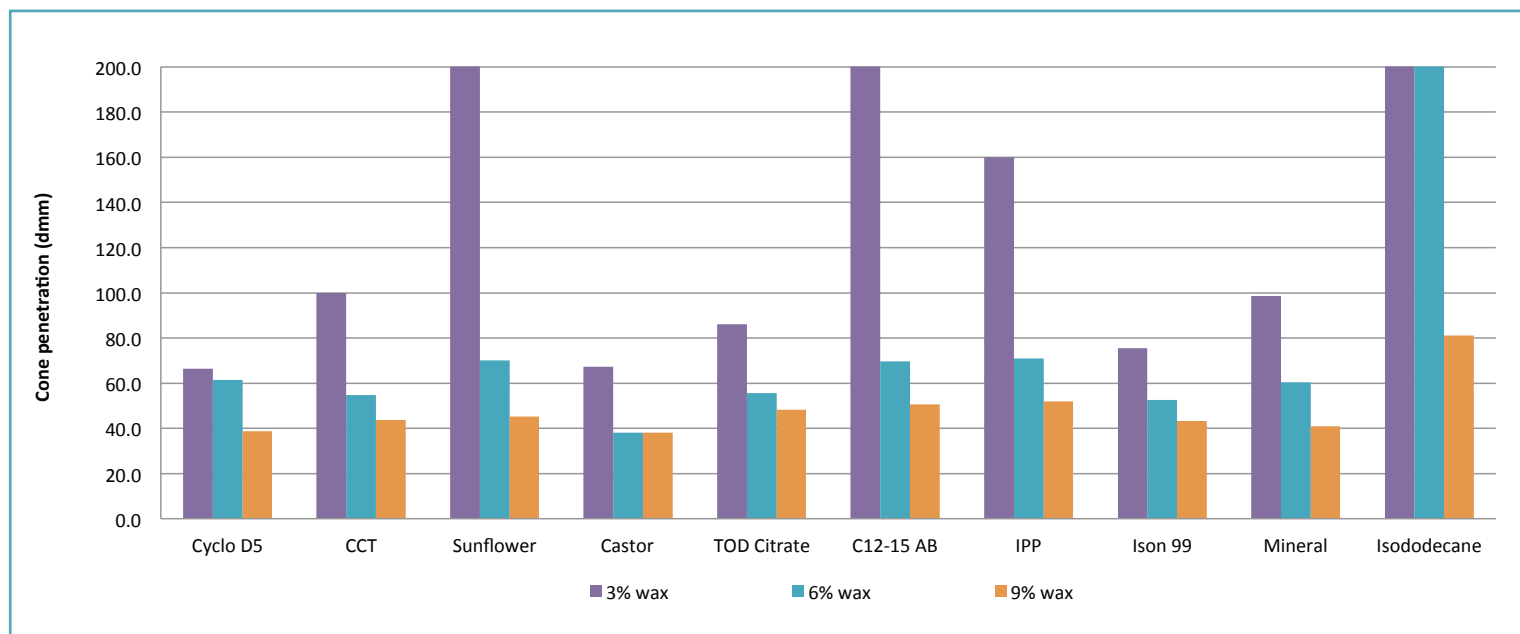
## Benefit Overview

- Primary Structurant
- Gelling Agent
- Viscosity Builder
- Thickener and Stabilizer
- Film Former
- Petrochemical Replacement
- Polyethylene Replacement

## Gel Strength & Congeal Points

Gel data is provided to show the strength of the gel formed and measured via ¼ cone penetration. The lower the cone penetration, the harder the gel structure is. For example, a stick formula could have a penetration reading of 20-50 dmm, while a balm or pot balm would register around 70-140 dmm.

Congeval information is used to understand how the gel solidifies. By combining the gel data with congeal temperature data, formulators can better predict and understand the type of gel and texture they can expect on the bench.



	Cyclo D5	CCT	Sunflower	Castor	TOD Citrate	C12-15 AB	IPP	I.I	Mineral	Isododecane
3% wax	161.0	152.0	*	167.0	145.0	*	133.0	134.0	126.0	*
6% wax	166.0	157.0	155.0	175.0	155.0	144.5	141.0	140.0	135.0	138.0
9% wax	168.0	162.0	161.0	178.0	161.0	150.0	146.0	145.0	140.0	143.0

\* All Congeal Points were tested. Missing data points denotes weak gel or liquid.



# SYNKOS 2065

WAX No. 889 P

## Benefit Overview

- Primary Structurant

Gelling Agent

Viscosity Builder

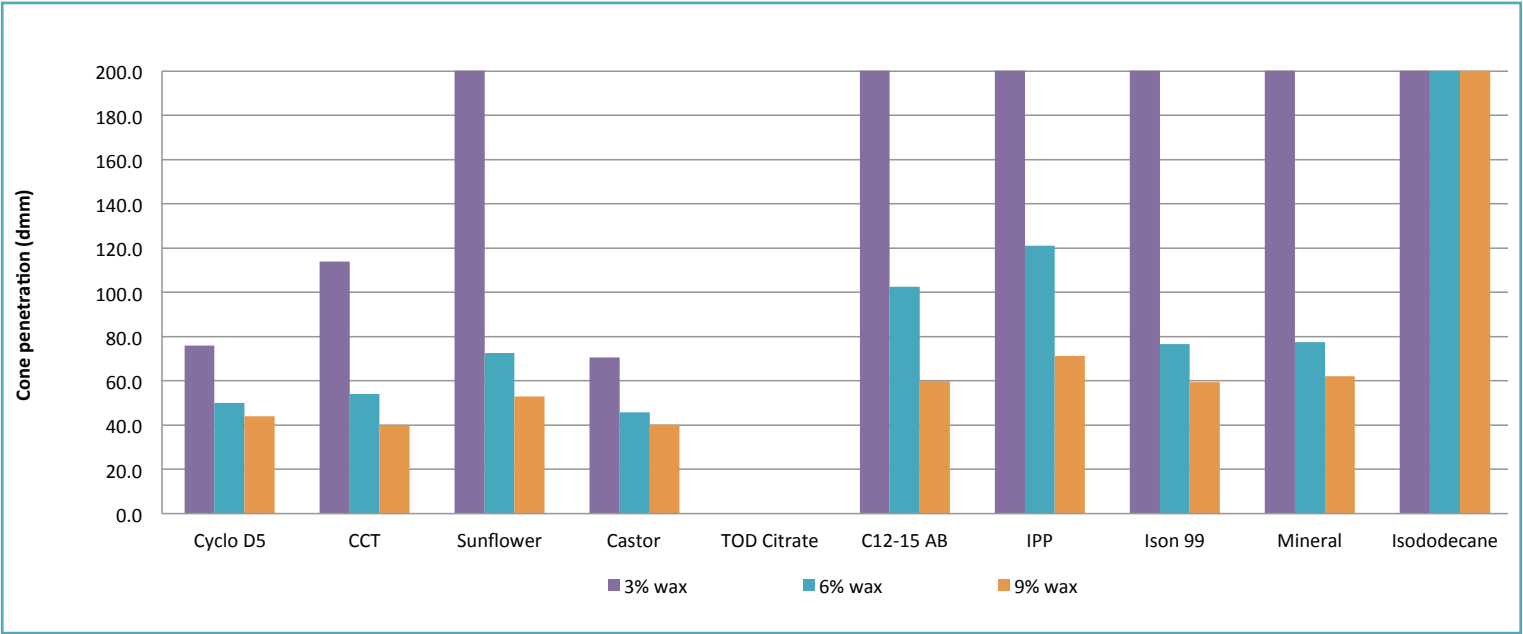
Thickener and Stabilizer
- Film Former

Polyethylene Replacement

## Gel Strength & Congeal Points

Gel data is provided to show the strength of the gel formed and measured via ¼ cone penetration. The lower the cone penetration, the harder the gel structure is. For example, a stick formula could have a penetration reading of 20-50 dmm, while a balm or pot balm would register around 70-140 dmm.

Congel information is used to understand how the gel solidifies. By combining the gel data with congeal temperature data, formulators can better predict and understand the type of gel and texture they can expect on the bench.



	Cyclo D5	CCT	Sunflower	Castor	TOD Citrate	C12-15 AB	IPP	I.I	Mineral	Isododecane
3% wax	160.0	123.0	*	152.0	*	*	*	*	*	*
6% wax	162.0	127.0	141.0	174.0	*	120.0	115.0	117.0	109.0	*
9% wax	180.0	128.0	149.0	178.0	*	127.0	118.0	121.0	116.0	*

\* All Congeal Points were tested. Missing data points denotes weak gel or liquid.

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## Chemical Properties

Product Name	Wax Number	Color	Penetration	Congel Point
<i>Methods</i>		<i>Visual</i>	<i>ASTM D1321</i>	<i>ASTM D938</i>
SynKos 2030	864 P	White	20-40dmm Max	50 to 60 °C
SynKos 2040	888 P	White	20dmm Max	58 to 68 °C
SynKos 2050	858 P	White	15dmm Max	68 to 75 °C
SynKos 2060	883 P	White	7dmm Max	77 to 83 °C
SynKos 2065	889 P	White	10dmm Max	80 to 95 °C

## Formulation Tips

The entire SynKos series works harmoniously together. Koster Keunen formulators have found at times a blend of SynKos products is the best choice for specific applications and textures.

## Percentage Usage

Formulators can use any amount of SynKos in formulation. It will depend on the system and overall texture or structure the formulator would like to achieve.

Overall: 1-50%

## Replacing Petrochemical Waxes\*

SynKos Waxes can also replace petrochemical waxes and petrolatum in various projects. Koster Keunen can provide laboratory results and scientific formulation support to assist you.

\* Ozokerites, Microcrystalline, Paraffin, Ceresin

