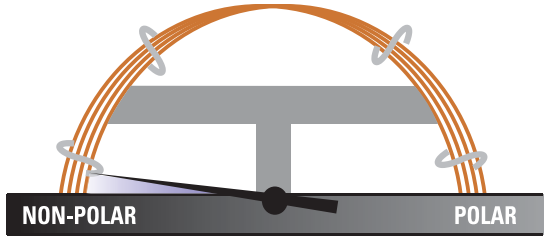
TRACE GC Columns

TRACE TR-1 GC Columns

Designed for method development

- Non-polar phase, 100% dimethyl polysiloxane
- High operating temperature



Phase:	100% Dimethyl Polysiloxane
Max. Temps.:	340°C/360°C
USP Listing:	G1, G2, G38

TRACE TR-1 GC Columns

ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
0.25	15	0.25	**260A130P**	1 Each
	30	0.1	**260A047P**	1 Each
		0.25	**260A142P**	1 Each
	60	0.25	**260A154P**	1 Each
0.32	15	0.25	**260A131P**	1 Each
	30	0.25	**260A143P**	1 Each

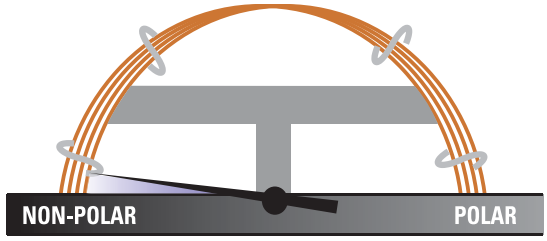
Applications:

- Chlorinated and nitroaromatic compounds
- Environmental analyses

TRACE TR-1MS GC Columns

Extremely low-bleed non-polar columns suitable for GC-MS applications

- Non-polar phase, 100% dimethyl polysiloxane
- High operating temperature
- Inert phase suited for environmental analyses



Phase:	100% Dimethyl Polysiloxane
Max. Temps.:	340°C/360°C
USP Listing:	G1, G2, G38

TRACE TR-1MS GC Columns

ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
0.25	30	0.1	**260B047P**	1 Each
		0.25	**260B142P**	1 Each
	60	0.25	**260B154P**	1 Each
0.32	30	0.25	**260B143P**	1 Each
	60	0.25	**260B155P**	1 Each
		1.0	**260B309P**	1 Each

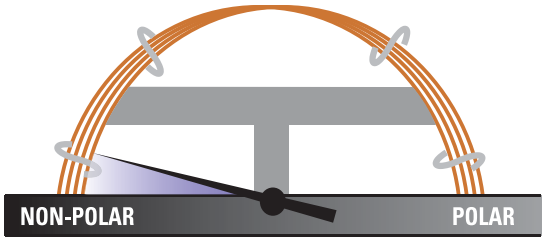
Applications:

- Chlorinated and nitroaromatic compounds
- GC-MS environmental analyses

TRACE TR-5 GC Columns

Excellent starting columns for method development, capable of performing most required separations

- Non-polar phase, 5% phenyl methyl polysiloxane
- High operating temperature and extremely low bleed
- Widely used in a variety of applications



Phase:	5% Phenyl Methylpolysiloxane
Max. Temps.:	320°C/340°C for films ≤1.5µm 280°C/300°C for films >1.5µm
USP Listing:	G27, G36

TRACE TR-5 GC Columns

ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
0.25	15	0.25	**260E130P**	1 Each
	30	0.25	**260E142P**	1 Each
		0.5	**260E223P**	1 Each
	60	0.25	**260E154P**	1 Each
0.32	7	0.25	**260E113P**	1 Each
	15	0.25	**260E131P**	1 Each
	30	0.25	**260E143P**	1 Each
		0.5	**260E224P**	1 Each
		1.0	**260E297P**	1 Each
	60	0.25	**260E155P**	1 Each
	100	0.5	**260E242P**	1 Each
0.53	30	0.5	**260E225P**	1 Each
		1.0	**260E298P**	1 Each
		1.5	**260E336P**	1 Each
		5.0	**260E470P**	1 Each

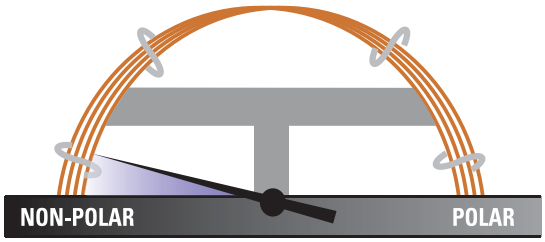
Applications:

- Alcohols
- Free fatty acids
- Aromatics
- Flavors
- Low polarity pesticides

TRACE TR-5HT GC Columns

Feature upper temperature limits as high as 400°C

- Non-polar phase, 5% phenyl polycarborane siloxane
- Allow the elution of higher-boiling hydrocarbons up to C100
- Low bleed even at elevated temperatures



Phase:	5% Phenyl Polycarborane Siloxane
Max. Temps.:	380°C/400°C
USP Listing:	G27, G36

TRACE TR-5HT GC Columns

ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
0.25	15	0.1	**260H035P**	1 Each
	30	0.1	**260H047P**	1 Each
		0.25	**260H142P**	1 Each
0.32	12	0.1	**260H030P**	1 Each

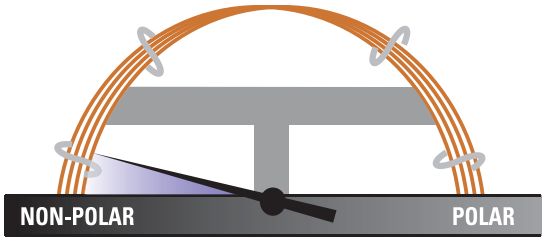
Applications:

- Hydrocarbons
- Solvents
- Pesticides
- Herbicides
- Phenols
- Amines

TRACE TR-5MS GC Columns

Features a popular GC-MS phase for many applications

- Non-polar phase, 5% phenyl polysilphenylene-siloxane
- Low bleed and high stability
- High signal-to-noise ratio for increased sensitivity
- High robustness to oxygen and water contamination



Phase:	5% Phenyl Polysilphenylene-siloxane
Max. Temps.:	360°C/370°C for films ≤1.5µm 350°C/360°C for films >1.5µm
USP Listing:	G27, G36

TRACE TR-5MS GC Columns

ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
0.10	10	0.1	**260F020P**	1 Each
0.15	25	0.25	**260F134P**	1 Each
0.18	20	0.18	**260F578P**	1 Each
0.25	15	0.1	**260F035P**	1 Each
		0.25	**260F130P**	1 Each
	30	0.1	**260F047P**	1 Each
		0.25	**260F142P**	1 Each
		0.25	**260F142J**	1 Each
		0.5	**260F223P**	1 Each
		1.0	**260F296P**	1 Each
	60	0.25	**260F154P**	1 Each
		1.0	**260F308P**	1 Each
0.32	15	1.0	**260F285P**	1 Each
	30	0.25	**260F143P**	1 Each
		0.5	**260F224P**	1 Each
		1.0	**260F297P**	1 Each
0.53	30	0.5	**260F225P**	1 Each
		1.0	**260F298P**	1 Each
		1.5	**260F336P**	1 Each
		3.0	**260F396P**	1 Each

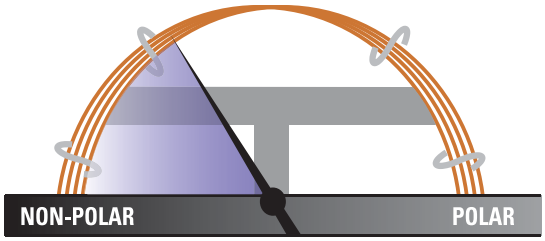
Applications:

- Hydrocarbons
- Solvents
- Pesticides
- Herbicides
- Phenols
- Amines

TRACE TR-35MS GC Columns

Mid-polarity columns excellent for many applications

- Mid-polarity phase, 35% phenyl polysilphenylene-siloxane
- Exceptionally low surface activity
- Low bleed even at elevated temperatures



Phase:	35% Phenyl Polysilphenylene-siloxane
Max. Temps.:	330°C/360°C
USP Listing:	G42

TRACE TR-35MS GC Columns

ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
0.25	15	0.25	**260C130P**	1 Each
	30	0.25	**260C142P**	1 Each
	60	0.25	**260C154P**	1 Each
0.32	30	0.25	**260C143P**	1 Each
0.53	15	1.0	**260C286P**	1 Each
	30	1.0	**260C298P**	1 Each

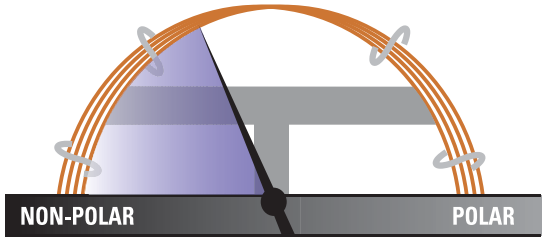
Applications:

- Pesticides
- Herbicides
- Drugs of abuse
- PAHs
- Pharmaceuticals

TRACE TR-1701 GC Columns

Mid-polarity column with alternative selectivity

- Mid-polarity phase, 14% cyanopropylphenyl polysiloxane
- Low bleed even at a high operating temperature
- Excellent starting point for method development
- Suitable for a wide variety of applications



Phase:	14% Cyanopropylphenyl Polysiloxane
Max. Temps.:	280°C/300°C
USP Listing:	G46

TRACE TR-1701 GC Columns

ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
0.25	30	0.25	**260Q142P**	1 Each
	60	0.25	**260Q154P**	1 Each
0.32	15	0.25	**260Q131P**	1 Each
	30	0.25	**260Q143P**	1 Each
	60	1.0	**260Q309P**	1 Each
		0.25	**260Q155P**	1 Each
0.53	30	1.0	**260Q298P**	1 Each

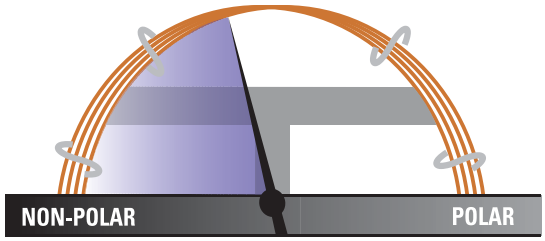
Applications:

- Pesticides
- PCBs
- PAHs
- Organic acids
- Drugs
- Steroids
- EPA 608, 8081

TRACE TR-50MS GC Columns

Mid-polarity columns well-suited to GC-MS applications

- Mid-polarity phase, 50% phenyl polysilphenylene-siloxane
- Low bleed decreases MS contamination
- Particularly useful for applications requiring a higher temperature and more polarity than a 5% phenyl column
- Column inertness results in minimal peak tailing and decreased breakdown of sensitive samples



Phase:	50% Phenyl Polysilphenylene-siloxane
Max. Temps.:	360°C/370°C
USP Listing:	G3

TRACE TR-50MS GC Columns

ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
0.25	15	0.25	**260R130P**	1 Each
	30	0.15	**260R050P**	1 Each
		0.25	**260R142P**	1 Each
0.32	30	0.25	**260R143P**	1 Each

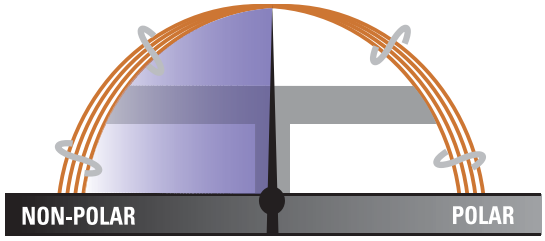
Applications:

- Herbicides
- Drugs of abuse
- EPA 604, 608, 8060, 8081
- Pharmaceuticals

TRACE TR-225 GC Columns

Reliable and reproducible performance

- Mid-polarity phase, 50% cyanopropylphenyl polysiloxane
- Low bleed even at elevated temperatures
- Outstanding robustness for difficult separations
- Manufactured to minimize risk of damage from contaminated carrier gas



Phase:	50% Cyanopropylphenyl Polysiloxane
Max. Temps.:	230°C / 250°C
USP Listing:	G7

TRACE TR-225 GC Columns

ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
0.25	30	0.25	**260Y142P**	1 Each
	60	0.25	**260Y154P**	1 Each
0.32	25	0.25	**260Y137P**	1 Each

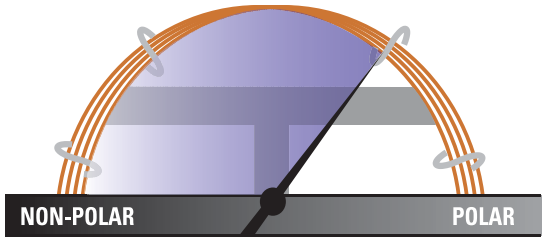
Applications:

- Fatty Acid Methyl Esters (FAMEs)
- Carbohydrates
- Neutral sterols

TRACE TR-Wax GC Columns

General purpose, high-polarity columns

- Polar phase, polyethylene glycol
- Highly crosslinked and fully deactivated
- Solvent washable



Phase:	Polyethylene Glycol (PEG)
Max. Temps.:	260°C/280°C for films <1.0µm 240°C/260°C for 1.0µm films
USP Listing:	G16, G20

TRACE TR-Wax GC Columns

ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
0.25	30	0.25	**260W142P**	1 Each
		0.5	**260W223P**	1 Each
		1.0	**260W296P**	1 Each
	60	0.25	**260W154P**	1 Each
0.32	15	0.25	**260W131P**	1 Each
	30	0.25	**260W143P**	1 Each
		0.5	**260W224P**	1 Each
		1.0	**260W297P**	1 Each
	60	0.25	**260W155P**	1 Each
		1.0	**260W309P**	1 Each
0.53	15	1.0	**260W286P**	1 Each
	30	0.5	**260W225P**	1 Each
		1.0	**260W298P**	1 Each
	60	1.0	**260W310P**	1 Each

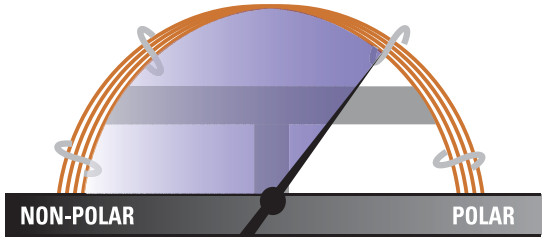
Applications:

- Esters
- Alcohols
- Ketones
- Glycols
- Aromatic isomers

TRACE TR-WaxMS GC Columns

Feature a high-polarity phase designed for mass spectrometry detectors

- Polar phase, polyethylene glycol
- Proprietary bonding method expands operating temperatures
- Extremely low bleed improves sensitivity and library matches
- High stability with oxygen and water



Phase:	Polyethylene Glycol (PEG)
Max. Temps.:	260°C/280°C
USP Listing:	G16

TRACE TR-WaxMS GC Columns

ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
0.25	30	0.25	**260X142P**	1 Each
		0.5	**260X223P**	1 Each
		1.0	**260X296P**	1 Each
	60	0.25	**260X154P**	1 Each
0.32	30	0.25	**260X143P**	1 Each
		0.5	**260X224P**	1 Each
	60	0.25	**260X155P**	1 Each

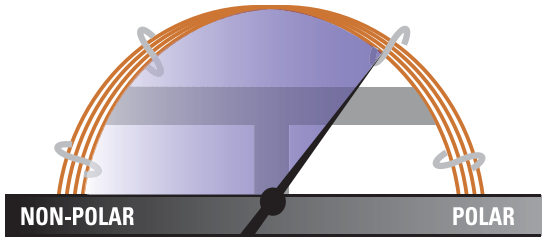
Applications:

- Aromatic hydrocarbons
- Food additives
- Essential oils
- Alcohols
- Esters
- Aldehydes
- Ketones

TRACE TR-FFAP GC Columns

High-polarity phase optimized for FFAP analysis

- Polar phase, TPA modified polyethylene glycol
- Bonded FFAP phase
- Quality tested for acidic compound analysis



Phase:	TPA Modified Polyethylene Glycol (PEG)
Max. Temps.:	240°C/250°C
USP Listing:	G25, G35

TRACE TR-FFAP GC Columns

ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
0.25	15	0.25	**260N130P**	1 Each
	30	0.25	**260N142P**	1 Each
	60	0.25	**260N154P**	1 Each
0.32	30	0.25	**260N143P**	1 Each
	50	0.5	**260N230P**	1 Each
0.53	15	0.5	**260N213P**	1 Each
	30	0.5	**260N225P**	1 Each
		1.0	**260N298P**	1 Each

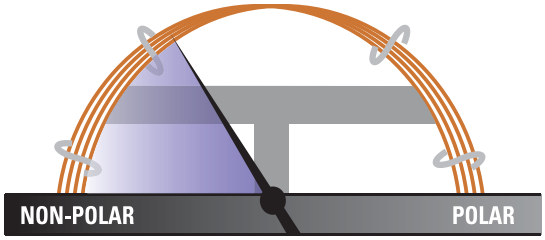
Applications:

- FFAP analysis
- Acidic compound analysis

TRACE TR-V1 GC Columns

Mid-polarity, thick-film columns

- Mid-polarity phase, 6% cyanopropylphenyl polysiloxane
- Thick films for the analysis of volatile analytes
- Low bleed suitable for MS detection



Phase:	6% Cyanopropylphenyl Polysiloane
Max. Temps.:	280°C/300°C
USP Listing:	G43

TRACE TR-V1 GC Columns

ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
0.18	20	1.0	**260V495P**	1 Each
0.25	30	1.4	**260V332P**	1 Each
	60	1.4	**260V333P**	1 Each
0.32	30	1.8	**260V339P**	1 Each
	60	1.8	**260V341P**	1 Each
0.53	30	3.0	**260V396P**	1 Each

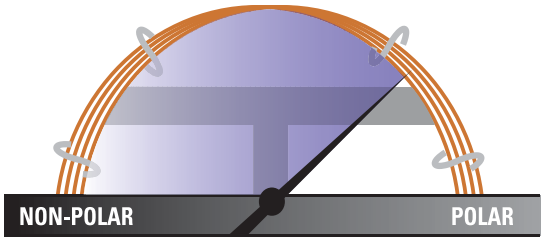
Applications:

- Volatile organics
- Alcohols
- EPA 502.2, 608 and 624

TRACE TR-FAME GC Columns

High-polarity phase optimized for FAME analysis

- Polar phase, 70% cyanopropyl polysilphenylene-siloxane
- High operating temperature compared to competitor columns
- Low bleed for mass spectrometry use



Phase:	70% Cyanopropyl Polysilphenylene-siloxane
Max. Temps.:	250°C/260°C
USP Listing:	N/A

TRACE TR-FAME GC Columns

ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
0.10	10	0.2	**260M096P**	1 Each
0.22	25	0.25	**260M135P**	1 Each
	30	0.25	**260M141P**	1 Each
	50	0.25	**260M147P**	1 Each
	60	0.25	**260M153P**	1 Each
0.25	30	0.25	**260M142P**	1 Each
	60	0.25	**260M154P**	1 Each
	120	0.25	**260M166L**	1 Each
0.32	25	0.25	**260M137P**	1 Each
	30	0.25	**260M143P**	1 Each
	60	0.25	**260M155P**	1 Each

Applications:

- Fatty Acid Methyl Esters (FAMEs)
- FAMEs Cis/Trans Isomers

TRACE GC Columns for EPA Methods

Low bleed and temperature-stable performance tailored to specific EPA methodologies

- TRACE TR-524 and TRACE TR-525 Columns: US EPA Drinking Water Test Methods 524 or 525
- TRACE TR-527 Columns: US EPA Drinking Water Test Method 527, features the robust, low-bleed performance required for analysis of pesticides and flame retardants
- TRACE TR-8270 Columns: US EPA Solid Waste Test Method 8270
- TRACE TR-8095 Columns: US EPA Method 8095 for Explosives Testing featuring high max temperature and low surface activity

TRACE GC Columns for EPA Methods

Phase	ID (mm)	Length (m)	Film Thickness (µm)	**Cat. No.**	Quantity
TR-524	0.18	20	1.0	**26RV495P**	1 Each
TR-525	0.25	30	0.25	**26RX142P**	1 Each
TR-527	0.25	30	0.25	**26RF142P**	1 Each
TR-8095	0.32	12	0.25	**260P123P**	1 Each
TR-8270	0.25	30	0.5	**26RF223P**	1 Each
TR-8270	0.25	30	1.0	**26RF296P**	1 Each

Applications:

- Volatile Organic Compounds (VOCs)
- Pesticides
- Flame retardants
- Explosives

TRACE GC Columns for Pesticides

Specifically designed and tested for analysis of pesticides

- Low bleed decreases MS contamination
- Particularly useful for applications requiring a higher temperature
- Column inertness results in minimal peak tailing and decreased breakdown of sensitive samples

Applications:

- Organophosphate pesticides
- Organochlorine pesticides
- Pyrethroid pesticides
- Herbicides

TRACE GC Columns for Pesticides

Phase	ID (mm)	Length (m)	Film Thickness (µm)	Guard	**Cat. No.**	Quantity
TR-Pesticide	0.25	30	0.25	5m guard column attached	**26RF142F**	1 Each
TR-Pesticide II	0.25	30	0.25	5m guard column attached	**26RD142F**	1 Each
TR-Pesticide III	0.25	30	0.25	5m guard column attached	**26RC142F**	1 Each
TR-Pesticide IV	0.25	30	0.25	–	**26RC142P**	1 Each

TRACE GC Columns for Dioxin and PCB Analysis

Designed to meet the requirements of high resolution GC-MS methods

- TRACE TR-Dioxin 5MS Columns; Specifically designed for Dioxin and Furan testing
- Wide coverage of the 17 cogeners with the highest toxicological significance
- TRACE TR-PCB 8MS Columns; meets the requirements for HR GC-MS analysis of PCBs
- Low bleed

TRACE GC Columns for Dioxin and PCB Analysis

Phase	ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
TR-PCB 8MS	0.25	50	0.25	**26AJ148P**	1 Each
TR-Dioxin 5MS	0.25	60	0.25	**26AF154P**	1 Each
TR-Dioxin 5MS	0.25	30	0.1	**26AF047P**	1 Each
TR-Dioxin 5MS	0.25	60	0.1	**26AF059P**	1 Each

Applications:

- Dioxins (PCDDs)
- Furans (PCDFs)
- PCB congeners

TRACE GC Columns for Biodiesel Analysis

Designed for use in carbon neutral fuels development applications

- GC columns designed for specific EN methods and ASTM methods
- Specific columns for the determination of methanol, FAMEs or glycerides

Applications:

- Biodiesel
- ASTM D-6584
- EN14214

TRACE GC Columns for Biodiesel Analysis

Phase	Method	ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
TR-BioDiesel (M)	EN 14110	0.32	30	3.0	**26AA395P**	1 Each
TR-BioDiesel (G)	EN 14105	0.32	10	0.1	**26AF024P**	1 Each
TR-BioDiesel (F)	EN 14103	0.25	30	0.25	**26AX142P**	1 Each
TR-BioDiesel (G) ASTM	ASTM D-6584	0.32	10	0.1	**26RF024P**	1 Each

TRACE GC Columns for Drugs of Abuse

Specifically designed for the analysis of common drugs of abuse

- TRACE TR-DoA 5MS Columns; widely used for the analysis and determination of a range of toxicological target compounds including amphetamines, codeine and morphine
- TRACE TR-DoA 35MS Columns; the recommended column for use in drug testing labs for the confirmation of THC

TRACE GC Columns for Drugs of Abuse

Phase	ID (mm)	Length (m)	Film Thickness (µm)	Cat. No.	Quantity
TR-DoA35	0.20	15	0.33	**26AC497P**	1 Each
TR-DoA5	0.25	15	0.25	**26AF130P**	1 Each

Applications:

- Amphetamines, codeine and morphine