

Instructions for Using the THC Quantitation Worksheet

- 1 All of the formula cells have been protected. Data entry cells are not protected and should be filled in as indicated below.
- 2 Fill in your FS Lab #, Name, and Internal Standard information at the top of each sheet used.
- 3 On the Standards tab, enter the weights and volumes for the calibration standard and check standard. Enter the molecular weight (MW) of both the base drug and the specific standard used.
- 4 On the Quant sheet, edit your Item numbers.
- 5 Enter the Peak Areas from the GC Integration for each of the three runs for your standard, check standard and each of the six samples.
- 6 Enter the volume (mL) used to make each item.
- 7 Enter the weight (mg) used to make each item.
- 8 After entering all of the data, check the quality control information at the bottom. The precision must be below 3% and the accuracy must be below 7%. If the values are higher, the samples must be rerun and/or remade.

FS Lab #:
 Chemist:

Analyte:
 Internal Std:

Internal Standard Concentration (mg/mL)

Standards Preparation	Calibration Standard	Check Standard
Weight (mg)	<input type="text"/>	<input type="text"/>
Volume (mL)	<input type="text"/>	<input type="text"/>
MW of drug (g/mol)	<input type="text"/>	<input type="text"/>
MW of std (including salt, waters of hydration, etc.) (g/mol)	<input type="text"/>	<input type="text"/>
If the standard is monobasic, enter 1. If the standard is dibasic, enter 2.	<input type="text"/>	<input type="text"/>
Theoretical Concentration (mg/mL)	#DIV/0!	#DIV/0!
Correction to base (MW base/MW std)	#DIV/0!	#DIV/0!
Corrected Concentration (mg/mL)	#DIV/0!	#DIV/0!

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FS Lab #-Item#:
 Chemist:

Analyte: THC
 Internal Std:

	[CAL. STD]	Ratio (R ₂)	Ratio (R ₁)	Volume (V)	Weight (W)	Calculated Concentration (mg/mL)
Check Std.	#DIV/0!	#DIV/0!	#DIV/0!			#DIV/0!
Sample 1	#DIV/0!	#DIV/0!	#DIV/0!			#DIV/0!
Sample 2	#DIV/0!	#DIV/0!	#DIV/0!			#DIV/0!
Sample 3	#DIV/0!	#DIV/0!	#DIV/0!			#DIV/0!
Sample 4	#DIV/0!	#DIV/0!	#DIV/0!			#DIV/0!
Sample 5	#DIV/0!	#DIV/0!	#DIV/0!			#DIV/0!
Sample 6	#DIV/0!	#DIV/0!	#DIV/0!			#DIV/0!

% Purity Calculation:

$$\% \text{ Drug} = \left\{ \left(\frac{[\text{STD}] * R_2 * V}{R_1 * W} \right) * 100 \right.$$

[STD] = Concentration of Standard in mg/mL
 R₂ = Peak Area of Sample / Peak Area of Internal Standard
 R₁ = Peak Area of Standard / Peak Area of Internal Standard
 V = Volume of Internal Standard used in mL
 W = Sample Weight in mg

Quality Control

	Run #1		Run #2		Run #3		
	Peak Area (Analyte)	Peak Area (Internal Std)	Peak Area (Analyte)	Peak Area (Internal Std)	Peak Area (Analyte)	Peak Area (Internal Std)	Average Ratio
Cal. Std.							#DIV/0!
Check Std.							#DIV/0!
	Calc. Conc. 1	Calc. Conc. 2	Calc. Conc. 3	Std Deviation	Precision (%)	Accuracy (%)	Purity (%)
Check Std	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Corrected Theoretical Concentration #DIV/0!

FS Lab #-Item#: **0**
 Chemist: **0**

Analyte: **THC**
 Internal Std: **0**

Data Table

	Peak Area (Analyte)	Peak Area (Internal Std)	Ratio	% Purity (Analyte)
Sample 1			#DIV/0!	#DIV/0!
Sample 2			#DIV/0!	#DIV/0!
Sample 3			#DIV/0!	#DIV/0!
Sample 4			#DIV/0!	#DIV/0!
Sample 5			#DIV/0!	#DIV/0!
Sample 6			#DIV/0!	#DIV/0!
			Mean	#DIV/0!
			Standard Deviation	#DIV/0!
			Relative Standard Deviation	#DIV/0!

Uncertainty of Measurement

Acceptance Criteria for QC Purity Solutions: ±7 %Relative	
The acceptance criteria for QC purity is considered a rectangular distribution in which a=7.0	
$u=(7/\sqrt{3}) = 4.04\%_{\text{Relative}}$	
Calculation of Combined Uncertainty	
Check Std Purity Tolerance	4.04
Replicate Relative Std. Deviation	#DIV/0!
Combined Uncertainty	#DIV/0!
Calculation of Expanded Uncertainty	
95% Confidence Level	#DIV/0!
95% Confidence Level %purity	#DIV/0!
Results	#DIV/0! #DIV/0! ## #DIV/0! #DIV/0!