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Doc. no. **VSC/CIF/SOP/001**	Doc. name: **Standard Operating Procedure for GCMS**	Location : **CIF Lab-111**
Model :**GC(7890B), MS(5977A)** Sr.No : **CN14153010**	Make: **Agilent Technologies**	ID no. **VSC/CIF/001**
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1. OBJECTIVE

To describe the procedure for operation and maintenance of GCMS

2. SCOPE

Applicable to GC-MS system in the Central Instrumentation Facility (CIF) Lab

3. REFERENCE & ATTACHMENTS :

3.1 User's operating manual supplied by manufacturer.

3.2 Attachment – I Log book record.

3.3 Attachment –II Maintenance Log

4. RESPONSIBILITY

4.1 **Head of Department**

4.1.1 To ensure the implementation of this SOP.

4.1.2 To initiate repairs and to make alternative arrangements during the pendency of repair.

4.2 **Application Chemist**

4.2.1 To ensure proper documentation as per SOP.

4.2.2 To maintain the instrument and its accessories.

4.2.3 To inform about any failure of instrument or calibration failure to Head and to make a record in maintenance log.

5. ABBREVIATIONS

SOP	Standard operating procedure
GCMS	Gas Chromatography Mass Spectroscopy
kPa	Kilopascal
GC	Gas Chromatography

6. PROCEDURE

- This section describes following basic operating procedure for GCMS:
  - Gas requirements
  - Instrument Startup & Shutdown

- Maintenance

- An understanding of this topics is crucial for operating GCMS instrument and GCMS Online software.

6.1 Gas requirements

- This section describes the carrier gas used by this system. The specifications presented below must be followed to promote safety and maintain instrument performance.
- Carrier gas & Supply Pressure
- Helium (300-980 kPa)
- Hydrogen (Depends on Analytical condition)
- Methane (Depends on Analytical condition)
- Isobutane (Depends on Analytical condition)
- Argon (350-450 kPa)
- Oxygen (below 3 ppm)
- The Pressure and flow rate setting range on GC varies according to supply pressure..
- **Note:** Any air leakage into the gas supply lines will degrade the purity of gas and may affect system performance.

6.2 Instrument Startup & Shutdown

6.2.1 Turn on the Carrier gas.

6.2.2 Turn on the power switches of whole instrument.

6.2.3 First start GC, MS respectively.

6.2.4 Turn on Computer, Monitor and start window.

6.2.5 Double click a GCMS Online.

6.2.6 Select the used id and enter the password.

6.2.7 Click OK so the program starts up.

6.2.8 Close the GCMS Online.

6.2.9 Switch OFF the GC, MS respectively.

6.2.10 Switch OFF the power switches of whole instrument.

6.3 Maintenance

6.3.1 Make sure the Column is Connected at both side (Injection port and Detector side)

6.3.2 Keep the instrument in a dust, vibrations, spatial noise and corrosive gases free environment.

6.3.3 Wipe the instrument to make it dust free before operation.

6.3.4 Do not turn off power supply to the main electronic of the instrument and pump at any time except under maintenance.

6.3.5 Make sure the continuous supply of carrier gas.

6.3.6 Check for leaks, always after performing maintenance.

6.3.7 Flush the column thoroughly with appropriate solvent after each sample analysis.

6.3.8 Oil in the pump should be monitored to maintain the minimum level.

7. DISTRIBUTION OF SOP:

- Master copy (original): To be kept with Head of Department.
- Reference copy: To be kept with Application Chemist
- Reference copy: For display at instrument

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