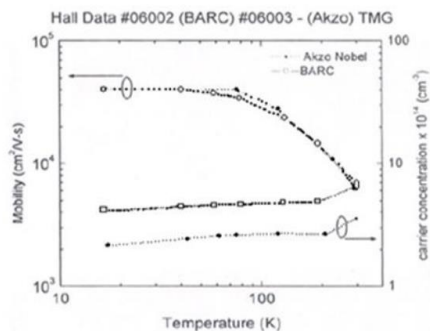


# HIGH PURITY TRI-METHYL GALLIUM (99.999%)



Trimethyl gallium



Comparison of mobility and carrier concentration of gallium arsenide layers grown with BARC TMGa and Commercial (Akzo Nobel SSG grade) TMGa

Trimethylgallium,  $\text{Ga}(\text{CH}_3)_3$ , often abbreviated to TMG or TMGa, commonly used metalorganic source of gallium for metalorganic vapour phase epitaxy (MOVPE) for preparation of gallium-containing compound semiconductors used in fabrication of optoelectronic devices and solar panels. In our synthetic method the intermediate adduct of TMG is prepared which has no such limitation & can be stored for long time without any stringent safety precautions.

The emphasis of Government on semiconductor chips manufacturing in India, will boost the demand indigenously sourced raw materials.

## Specifications:

- TMG is a clear, colorless, pyrophoric liquid i.e. catch fire on exposure to air. TMG is known to react violently with water and other compounds that are capable of providing labile and active hydrogen (i.e. protons).
- TMG needs to be handled with care and caution, e.g. stored in a cool, dry place at 0-25 °C, under inert atmosphere, and ensuring that storage temperatures would not exceed 40 °C to avoid deterioration.

## Application:

- Trimethylgallium,  $\text{Ga}(\text{CH}_3)_3$ , TMG or TMGa is commonly used metalorganic source of gallium for metalorganic vapour phase epitaxy (MOVPE) for preparation of gallium-containing compound semiconductors, such as:-
  - gallium arsenide (GaAs) (used in space applications, blue LED material gallium nitride (GaN),
  - gallium phosphide (GaP), gallium antimonide (GaSb) (used in fabrication of optoelectronic devices),
  - copper indium gallium sulfide and copper indium gallium selenide (CIGS) (used in manufacture of high efficiency solar panels).
- TMG is used for preparation of thin films of gallium based semiconductor materials which are used in micro-electronic and high speed devices.
- TMG is routinely used for preparation of GaAs, GaN, GaP thin films.