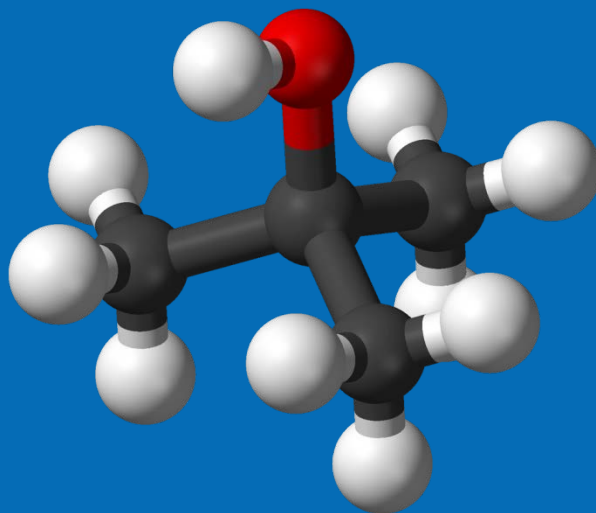


# Preliminary Materials for the IRIS Assessment of *tert*-Butyl Alcohol (*tert*-Butanol)

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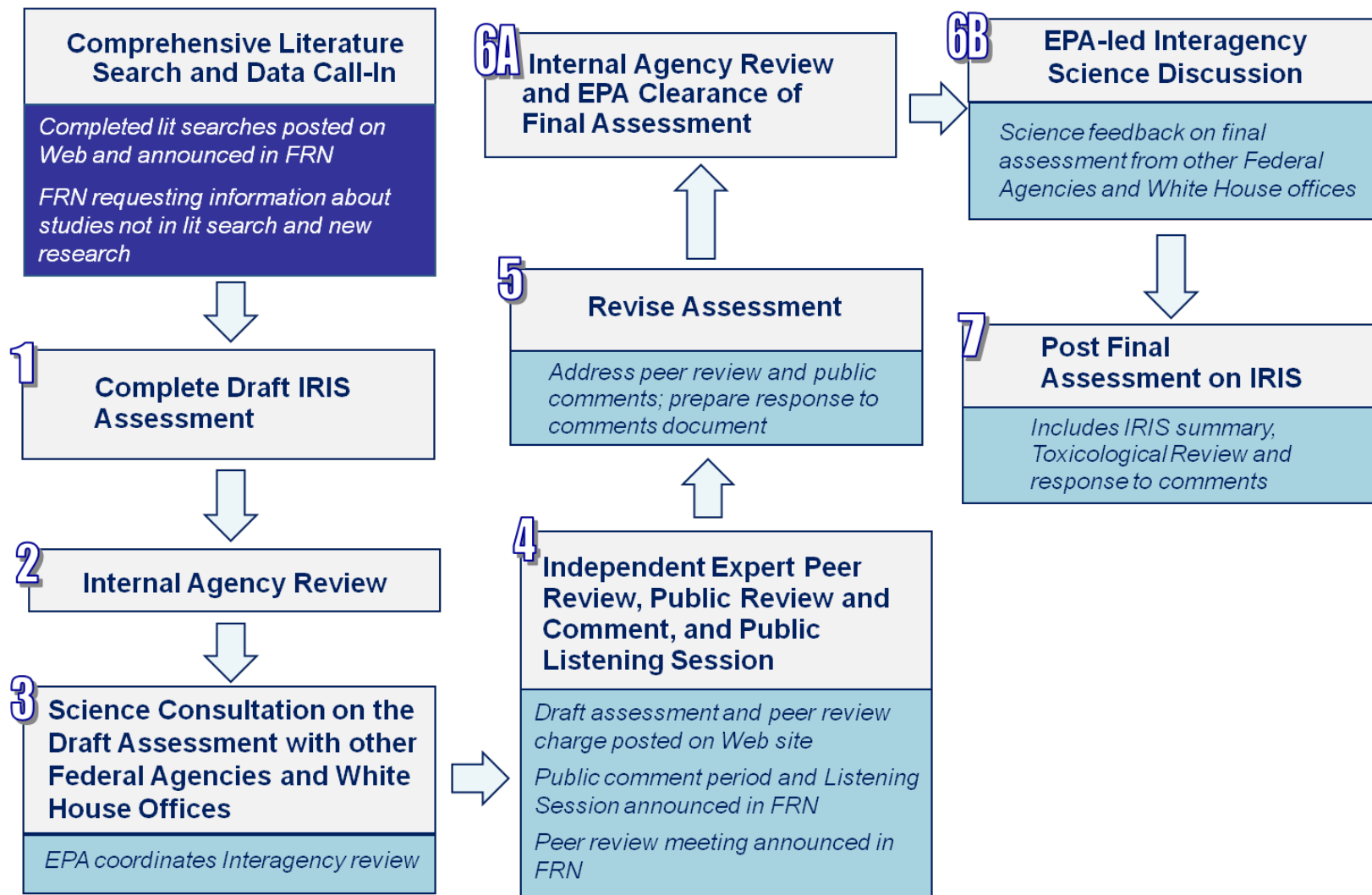


## General Information

- *tert*-Butanol is a white crystalline solid or colorless liquid (above 77° C).
- *tert*-Butanol is used as a solvent, denaturant for alcohols, dehydrating agent, and in the manufacture of methyl methacrylate, flotation agents, fruit essences, perfumes, and proposed as an octane booster in gasoline
- *tert*-Butanol is subject to reporting under section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) (Toxics Release Inventory (TRI) Chemical)

## Exposure

- Individuals working at facilities where *tert*-butanol is produced or used may be exposed.
- General population exposures may occur through the ingestion of drinking water and foods and inhalation of air containing *tert*- butanol.



## Preliminary Materials for the IRIS Assessment of *tert*-Butanol:

- Draft literature search strategy
- Draft literature search results
- Preliminary evidence tables
- Preliminary exposure-response arrays

\*These materials are available online at:

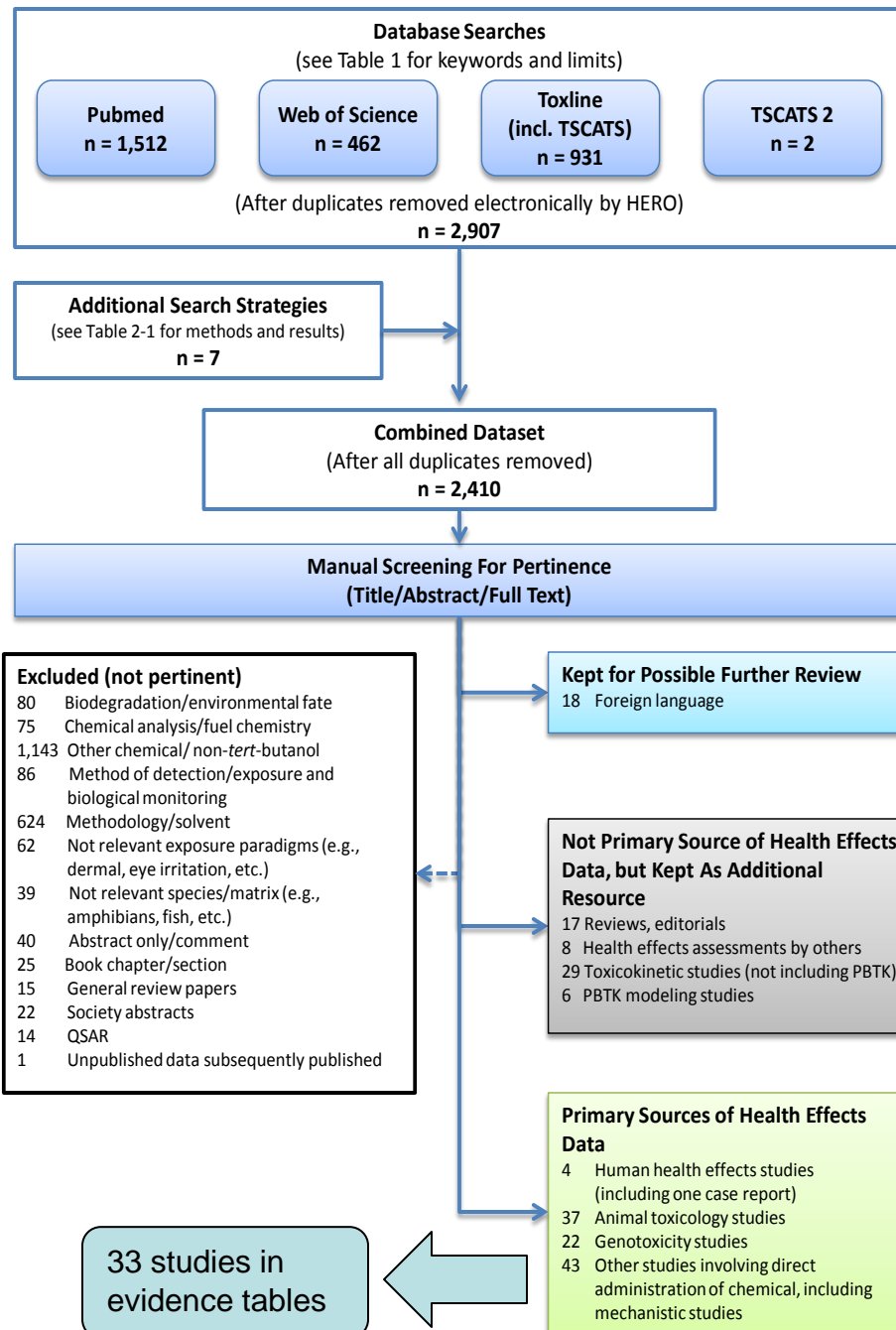
[http://www.epa.gov/iris/publicmeeting/iris\\_bimonthly-dec2013/mtg\\_docs.htm](http://www.epa.gov/iris/publicmeeting/iris_bimonthly-dec2013/mtg_docs.htm)

## Literature Search Strategy

- The literature search identified more than 2,400 studies for *tert*-butanol.
- 184 references are being considered for the assessment after an initial screen for relevance.

## Data Extraction to Evidence Tables

- 33 references directly informing hazard identification are described in evidence tables.



## Features of the *tert*-Butanol Database

	<b>Chronic</b>	<b>Subchronic</b>	<b>Two-Gen Repro/Dev</b>	<b>MOA Information</b>	<b>PBPK</b>
Oral	✓	✓	✓	✓	✓
Inhalation		✓	✓	✓	✓

- Human data on exposures to *tert*-butanol consist of a case report, an occupational study with co-exposures to other solvents, and studies assessing acute effects.

## Endpoints with Data for Evaluating Hazard

- *Kidney Effects*
- *Thyroid Effects*
- *Reproductive, Developmental, and Neurodevelopmental Effects*
- *Central Nervous System (CNS) Effects*
- *Other Systemic Effects (Body Weight, Liver, and Urinary Bladder)*
- *Genotoxic Effects*

## Scientific Considerations

- *PBPK models*
  - Metabolite in MTBE and ETBE models
- *Kidney mode of action*
  - Alpha2u-globulin-associated-nephropathy
  - Chronic progressive nephropathy (CPN)
- *Thyroid follicular cell tumors*

## EPA welcomes all comments, such as:

- Clarity and transparency of materials
- Additional approach for identifying studies
- Selection of studies for data extraction
- Study quality considerations
- Additional studies that may inform the assessment