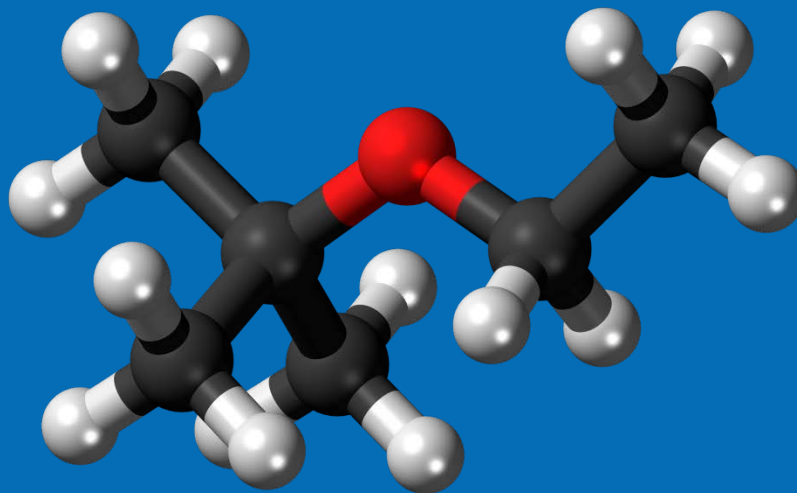


# Preliminary Materials for the IRIS Assessment of Ethyl *tert*-butyl ether (ETBE)

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## General Information

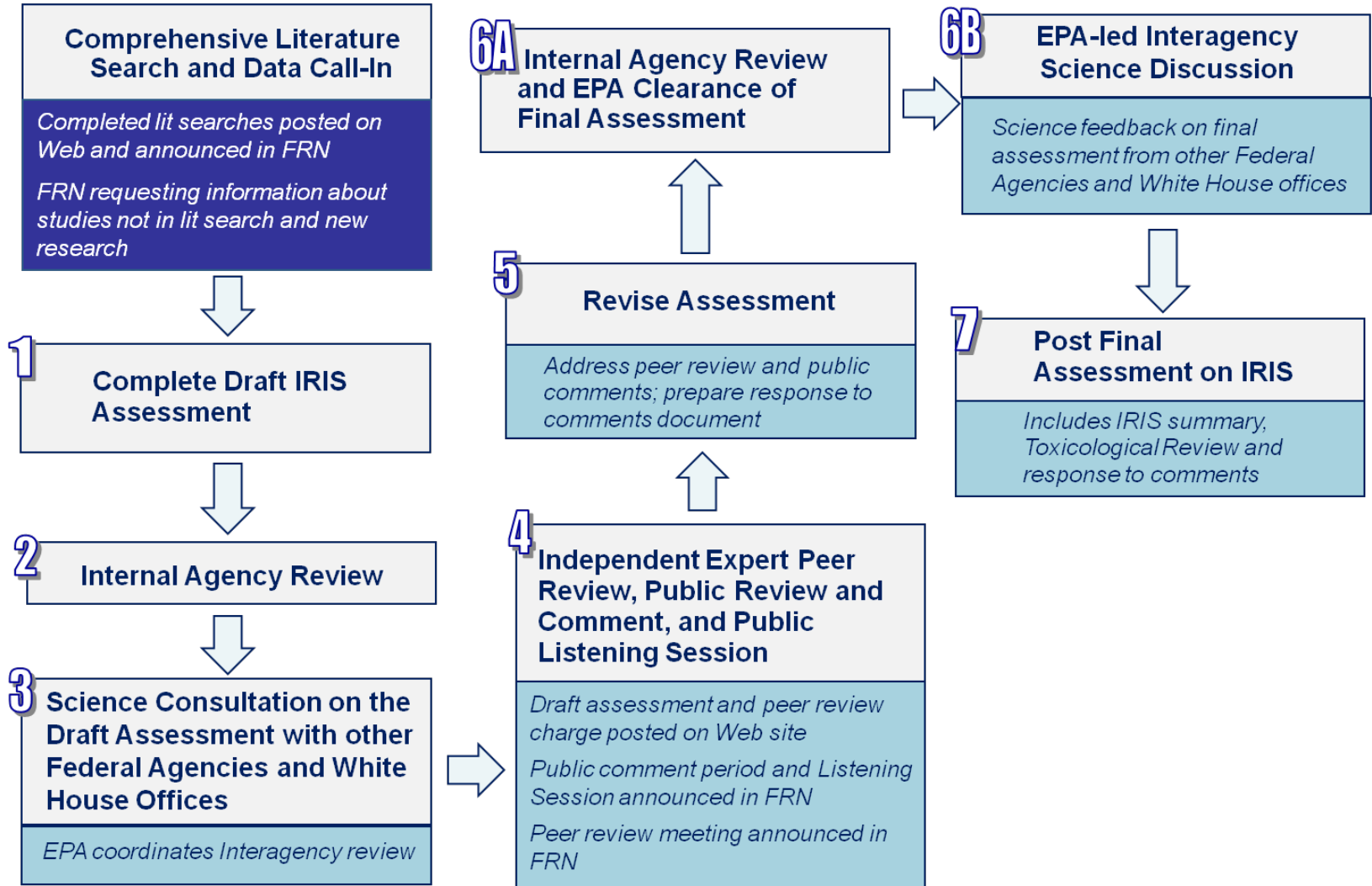
- ETBE is a colorless liquid with a strong odor similar to gasoline, varnish or ether.
- Possible application of ETBE as an oxygenate for gasoline.

## Exposure

- May occur through interaction with gasoline containing ETBE.
- General population could be exposed to vapors while refueling automobiles or by drinking contaminated groundwater.

## Assessment History

- 2009- External peer review identifies additional JPEC studies.



## Preliminary Materials for the IRIS Assessment of ETBE:

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

\*These materials are available online at:

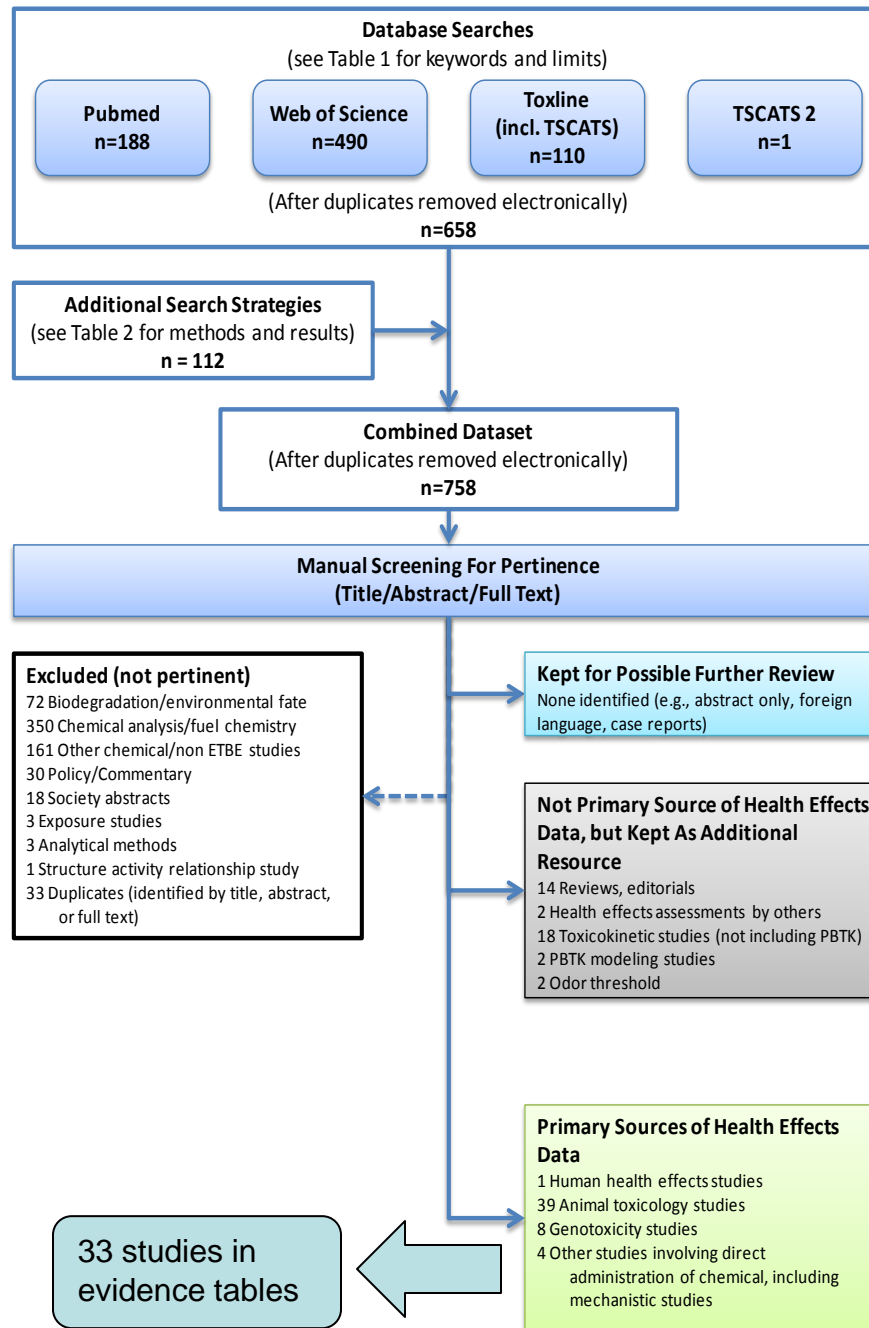
[http://www.epa.gov/iris/publicmeeting/iris\\_bimonthly-dec2013/mtg\\_docs.htm](http://www.epa.gov/iris/publicmeeting/iris_bimonthly-dec2013/mtg_docs.htm)

## Literature Search Strategy

- The literature search identified more than 700 studies for ETBE.
- 90 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 ETBE 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 ETBE consist of a human TK study

## Endpoints with Data for Evaluating Hazard

- *Kidney Effects*
- *Liver Effects*
- *Reproductive and Developmental Effects*
- *Cancer*
- *Other Systemic Effects*
- *Genotoxic Effects*

## Scientific Considerations

- *PBPK modeling*
  - Metabolized to *tert*-butanol & acetaldehyde
- *Kidney MOA*
  - Alpha2u-globulin-associated-nephropathy
  - Chronic progressive nephropathy (CPN)
- *Liver MOA*
  - PPAR
  - PXR/CAR
  - ALDH2

## 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