High-Level Accessibility Evaluation (WCAG 2.1)

Knovel

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Prepared for:
BTAA-Library Accessibility Alliance

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SUMMARY

This report reflects the findings of a high-level assessment of Knovel for its conformance with the W3C Web Content Accessibility Guidelines version 2.1 (WCAG 2.1).

This report shows that Knovel does have some issues with WCAG 2.1 compliance that need to be addressed, especially concerning proper labeling and the use of aria roles, as well as keyboard navigation. These findings significantly impact the accessibility of this database for people that require the use of screen readers or that use keyboard navigation, which could potentially keep them from fully using the system. These are the most critical issues to focus on correcting to improve access for all potential users of the system.

Top Findings

1. **Adaptability & Compatibility:** The most prominent issues uncovered through this evaluation are problems around the proper labeling, the use of aria roles, and landmark regions. Please consult the WAI-ARIA Authoring Best Practices from w3 for clarification on the use of aria roles.

2. **Use of Color & Navigation -** There are also several issues around keyboard focus throughout the database as well that specifically pertain to the lack of clear keyboard focus when navigating with the keyboard. There is no focus ring present throughout the majority of the page and most of the elements do not show focus at all. Some elements do show keyboard focus by changing color, however, this is a violation of SC 1.4.1 regarding the use of color as the sole means of communicating a prompt/action.

3. **Keyboard Accessibility -** There are a few areas on the site that are inaccessible using the keyboard or that trap the keyboard focus, preventing the user from moving forward in the interface.

ACCESSIBILITY FINDINGS

This report was conducted against the Knovel database and covers a selection of pages and features that were to be tested as a representative sample of the database's conformance to the WCAG 2.1 AA standards.

The resource was reviewed using a combination of manual and automatic review tools and assistive technologies, including the WAVE Accessibility Assessment tool, Axe Accessibility Assessment tool, WCAG Color Contrast Checker, and NVDA screen reader. All problems identified by automatic tools were double checked manually. This evaluation was performed using Firefox on Windows 10.

Below are the findings revealed during the accessibility evaluation of the Knovel database. The later screens in this evaluation appear to be more accessible, with the last two pages having very few unique accessibility issues. Details about each finding are provided along with the success criterion that is problematic.
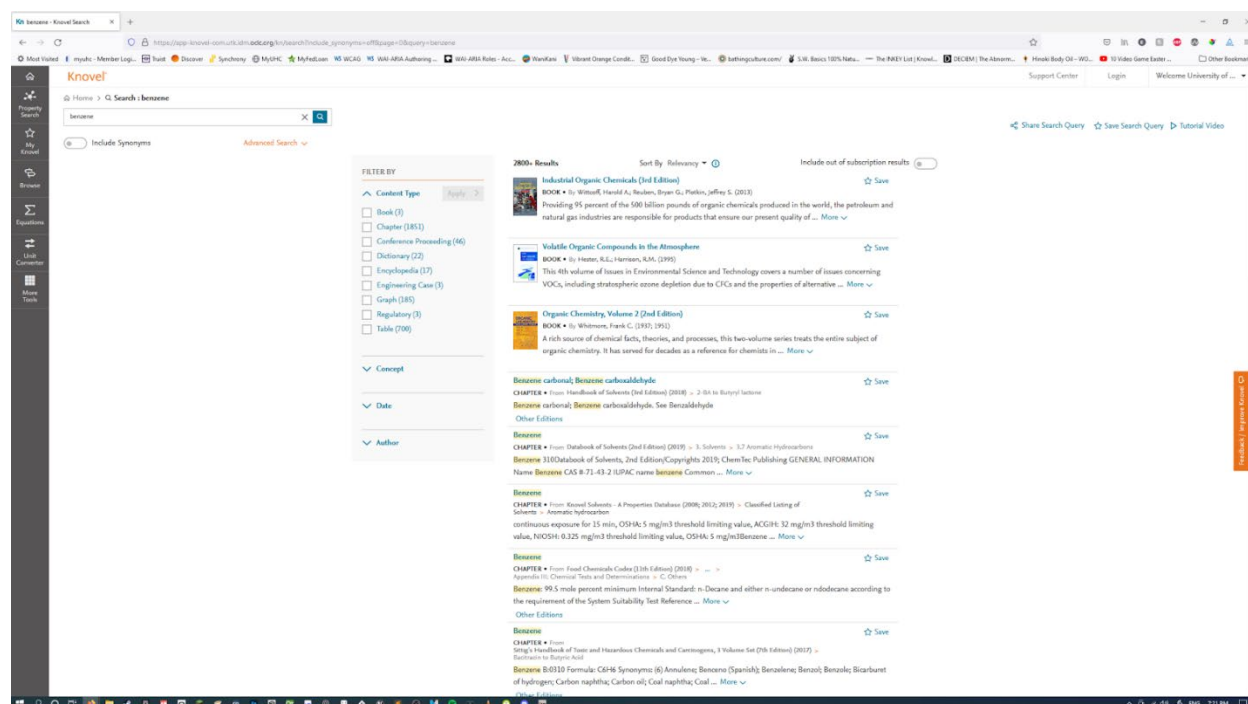
1. Initial Interface

Test Case: Test initial interface/landing page to ensure menus, sub-menus, search box, images, icons, etc. are accessible.

SC 1.1.1: Image in the "Solve Equations" tile does not have alternative text

SC 1.3.1: Dropdown menu in top right uses the menu role but does not contain required ARIA child roles (group, menuitemradio, menuitem, menuitemcheckbox).

SC 1.3.1: All page content should be contained by landmarks.

SC 1.3.1: This document should have one main landmark.

SC 1.4.1: Keyboard focus should not be conveyed using color as the only way to discern focus.

SC 1.4.3: Insufficient color contrast ratio of 3.06:1 between foreground color #E9711C and background color #FFFFFF.

SC 1.4.3: Insufficient color contrast ratio of 4.31:1 between foreground color #767676 and background color #F9F9F9.

SC 2.1.2: "Supporting Pathways to Sustainability" tile traps keyboard focus and doesn't allow the user to navigate further with the keyboard.

SC 2.4.3: Vertical navigation breaks logical order for screen-reader and keyboard focus.

SC 2.4.6: This page should contain an h1 heading.

SC 2.4.7: Keyboard focus is not always visible or clear.

SC 4.1.2: Dropdown menu in top right contains the element ID, aria-labelledby="options-menu", which does not exist on the page.

SC 4.1.2: Search button does not have discernable text, an aria label, or a title and is not discernible by screen readers.

SC 4.1.2: The "Include Synonyms" toggle does not have discernable text, an aria label, or a title and is not screen readable.

SC 4.1.2: Search field does not have an accessible name, aria label, or title.

2. Search Results

Test Case: From the initial landing page, conduct a search for: "Benzene." Test search results page, including filters/refine search. Filter by selecting "Table" from the Content Type and "catalytic" from Concept menu.

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SC 1.3.1: This document should have one main landmark.

SC 1.3.1: All page content should be contained by landmarks.

SC 1.3.1: Links in the filter panel are not identified as links but as buttons.

SC 1.3.1: Checkboxes in the filter panel are not identified as checkboxes but as buttons.

SC 1.3.1: "Results per page" dropdown menu uses the menu role but does not contain required ARIA child roles (group, menuitemradio, menuitem, menuitemcheckbox).

SC 1.3.1: "Sort By" dropdown menu uses the menu role but does not contain required ARIA child roles (group, menuitemradio, menuitem, menuitemcheckbox).

SC 2.1.1: Pagination is not navigable using the keyboard.

SC 2.4.6: This page should contain an h1 heading.

SC 4.1.2: "Sort By" dropdown menu contains the element ID, aria-labelledby="options-menu", which does not exist on the page.

SC 4.1.2: "Results per page" dropdown menu contains the element ID, aria-labelledby="options-menu", which does not exist on the page.

SC 4.1.2: Element <button id="content_type_filter_by_table_checkbox_button"...> has focusable descendants that should not be nested.

SC 4.1.2: Checkboxes in the filter panel do not have discernable text, an aria label, or a title, and is not screen readable.

SC 4.1.2: The "Include out of subscription results" toggle does not have discernable text, an aria label, or a title and is not screen readable.

3. Individual Results

Test Case: Test individual search result by choosing "Lower Explosive Limits, Heats of Combustion, and Catalytic Ignition Temperatures for Selected Compounds. Test the menu items at the top of the individual result screen starting with "Contents" and ending with "View Text".

SC 1.3.1: All page content should be contained by landmarks.

SC 1.3.1: This document should have one main landmark.

SC 1.3.1: The vertical navigation uses list elements that are not contained by an ordered or unordered list.

SC 1.3.1: The menu items here are extremely confusing when using a screen reader which reads each element as part of a table with 3 columns and 3 rows before saying the name of the button. It seems unnecessary unless it is by design.

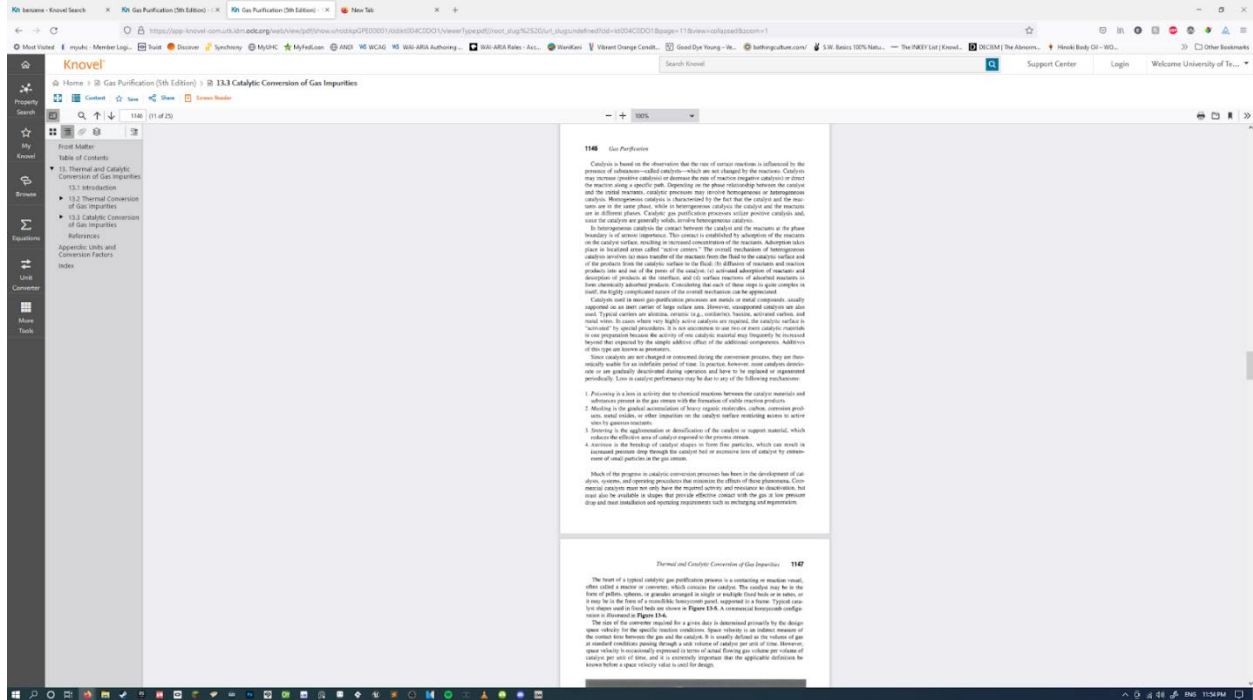**SC 1.4.1:** Keyboard focus should not be conveyed using only color.

SC 2.4.6: This page should contain an h1 heading.

SC 2.4.7: No keyboard focus on the menu items, except for the "expand" button to the far left.

SC 4.1.2: Links that are icon-only, like the "Home" and "Expand" buttons, should still have an accessible name, aria label, or title attribute.

4. Content Page

Test Case: Test "View Text" window and specifically the "Turn on Screen Reader View" option in the top menu.

SC 1.3.1: All page content should be contained by landmarks.

SC 1.3.1: The viewing frame should have an aria label or title attribute.

SC 1.3.1: This document should have one main landmark.

SC 1.4.1: Keyboard focus should not be conveyed using only color.

SC 2.1.1: Screen Reader view controls cannot be accessed using the keyboard.

SC 2.4.6: This page should contain an h1 heading.

NOTE: The screen reader mode here does work well with NVDA.

Disclaimer: This high-level evaluation was conducted for the Library Accessibility Alliance, and represents a good faith effort conducted within a limited time frame. It should not be assumed to be complete or free from error. No warranties or guarantees are implied. UT is not responsible for direct, indirect, or incidental damages based on this work; its use or interpretation by any individual, group, or organization; or on conditions beyond our control.