



ChemVantage LLC

Accessibility Conformance Report

WCAG Edition

(Based on VPAT® Version 2.5)

Name of Product/Version: ChemVantage v2024.11.22t1739

Report Date: November 23, 2024

Product Description: ChemVantage is an LTI app for teaching and learning college-level General Chemistry. The vendor website is <https://www.chemvantage.org> where instructors can learn about the product and school IT administrators can learn how to register ChemVantage in the institution's learning management system (LMS) using the LTIv1.3 standards. Students and instructors access ChemVantage content from inside the LMS by activating a launch link. Assignments are based on adaptive dynamic web content drawn from more than 10,000 question items. Upon completing each assignment (quiz, homework, practice exam, etc.), ChemVantage returns the student's score to the LMS grade book.

Contact Information: admin@chemvantage.org

Notes: none

Evaluation Methods Used: The product was evaluated by following 8 separate workflow journeys, one for each of the 8 different assignment types offered:

- **Quiz** – a timed informal summative assessment of a topic
- **Homework** – an assignment of 10-20 quantitative question items designed to promote problem-solving skills
- **Practice Exam** – a timed practice summative assessment designed to prepare students for a proctored exam on 25-50% of the course material
- **Placement Exam** - a pre-course assignment designed to assess student readiness to take a college-level General Chemistry course
- **SmartText** – combines a chapter reading assignment with a formative assessment of the student's knowledge of the chapter content
- **Video Quiz** - combines a short video lecture on one key concept with embedded quizzes that ensure that students are retaining the knowledge content provided
- **Poll** - an in-class assignment where students respond to question items in a collaborative environment and see aggregated statistical results for the class.

- **Sage** - a chemistry tutoring app powered by generative AI in which the student and AI collaborate to solve a series of increasingly challenging problems to demonstrate mastery of up to 146 key concepts in General Chemistry

For each of the 8 assignment types, the evaluation involved launching the assignment, completing the assignment in a student role using only keyboard navigation, and reviewing the assignment results. At each stage of the assignment, the HTML source code produced by ChemVantage was copied and pasted into a static web page and evaluated against WCAG accessibility standards using the free tool at <https://accessibe.com/accessscan>. A total of 32 pages (3-6 pages per assignment) were evaluated and code modifications made until all 32 pages passed 100% of the tests in the access scans.

Applicable Standards/Guidelines

This report covers the degree of conformance for the following accessibility standard/guidelines:

Standard/Guideline	Included In Report
Web Content Accessibility Guidelines 2.0	Level A (Yes) Level AA (Yes) Level AAA (No)
Web Content Accessibility Guidelines 2.1	Level A (Yes) Level AA (Yes) Level AAA (No)
Web Content Accessibility Guidelines 2.2	Level A (No) Level AA (No) Level AAA (No)

Terms

The terms used in the Conformance Level information are defined as follows:

- **Supports:** The functionality of the product has at least one method that meets the criterion without known defects or meets with equivalent facilitation.
- **Partially Supports:** Some functionality of the product does not meet the criterion.
- **Does Not Support:** The majority of product functionality does not meet the criterion.
- **Not Applicable:** The criterion is not relevant to the product.
- **Not Evaluated:** The product has not been evaluated against the criterion. This can only be used in WCAG Level AAA criteria.

WCAG 2.x Report

Note: When reporting on conformance with the WCAG 2.x Success Criteria, they are scoped for full pages, complete processes, and accessibility-supported ways of using technology as documented in the [WCAG 2.0 Conformance Requirements](#).

Table 1: Success Criteria, Level A

Notes:

Criteria	Conformance Level	Remarks and Explanations
1.1.1 Non-text Content (Level A)	Supports	The site provides text alternatives for all images and most other non-text content. Captions are provided for all audio tracks synchronized to instructional videos. The site does not present tests or exercises as non-text content. The site uses Google reCAPTCHA, which works with major screen readers and provides alternative audio challenges. The site does not use non-text content purely for decoration or visual formatting.
1.2.1 Audio-only and Video-only (Prerecorded) (Level A)	Not Applicable	The site does not provide any audio-only or video-only content.
1.2.2 Captions (Prerecorded) (Level A)	Supports	Captions are provided for all prerecorded audio content in synchronized media.
1.2.3 Audio Description or Media Alternative (Prerecorded) (Level A)	Supports	Captions are provided for all prerecorded audio content in synchronized media.
1.3.1 Info and Relationships (Level A)	Supports	Visual structure and relationship information is provided through object information or is available by text.
1.3.2 Meaningful Sequence (Level A)	Supports	The site content is provided in a meaningful sequence.
1.3.3 Sensory Characteristics (Level A)	Supports	Instructions for understanding the content are provided in text, and do not depend on sensory characteristics such as shape, size, color, location, orientation or sound.
1.4.1 Use of Color (Level A)	Supports	The site does not use color as a sole means of conveying information, distinguishing a visual element or prompting a user response. Color is used sparingly, and only for emphasis while maintaining a minimum 4.5:1 contrast ratio from other elements.
1.4.2 Audio Control (Level A)	Supports	The site provides video lectures that play automatically with synchronized audio. Pause and play controls are provided with the player.
2.1.1 Keyboard (Level A)	Supports	All functionality of the site can be accessed and operated using a keyboard.

Criteria	Conformance Level	Remarks and Explanations
2.1.2 No Keyboard Trap (Level A)	Supports	The site does not contain any known keyboard traps.
2.1.4 Character Key Shortcuts (Level A 2.1 only)	Supports	The site does not provide any character key shortcuts.
2.2.1 Timing Adjustable (Level A)	Supports	The site provides time limits for summative assessments (quizzes and exams). The user is informed of the time limit and provided with a countdown timer to monitor the remaining time but is not permitted to extend the time limit. This is an essential exception because time limits are an inherent part of assessment. However, the site provides tools for the instructor to change the time limits to accommodate students with a documented disability.
2.2.2 Pause, Stop, Hide (Level A)	Not applicable	The site does not include elements that blink, move, scroll or auto-update.
2.3.1 Three Flashes or Below Threshold (Level A)	Not applicable	The site does not include elements that flash.
2.4.1 Bypass Blocks (Level A)	Supports	The site provides links to skip to main content and footer as the first 2 elements in the focus order.
2.4.2 Page Titled (Level A)	Supports	Each page has a title that identifies the site (ChemVantage) as well as the page topic or purpose (e.g., Practice Exam).
2.4.3 Focus Order (Level A)	Supports	The site's elements receive focus in a meaningful order.
2.4.4 Link Purpose (In Context) (Level A)	Supports	The purpose of each link in the site can be determined from the link text alone or from the programmatic context of the link.
2.5.1 Pointer Gestures (Level A 2.1 only)	Not applicable	The site does not require or accept multi-point or path-based gestures.
2.5.2 Pointer Cancellation (Level A 2.1 only)	Supports	The site events that require a pointer or keyboard input are completed when the user releases the pointer or key.
2.5.3 Label in Name (Level A 2.1 only)	Supports	The accessible name of each user interface component that includes a visible text label corresponds to that label text.
2.5.4 Motion Actuation (Level A 2.1 only)	Not Applicable	The site does not have any functionality that relies on user or device motion.
3.1.1 Language of Page (Level A)	Supports	The default language of each page is declared in the <HTML lang="en"> tag.

Criteria	Conformance Level	Remarks and Explanations
3.2.1 On Focus (Level A)	Supports	Most site components do not cause a change of context when focused. The Homework assignment makes a <textarea> element visible as a scratchpad when the user creates focus on a question item. However, the overall context is maintained, and navigation is not interrupted.
3.2.2 On Input (Level A)	Supports	The site's components do not cause a change of context on user input.
3.2.6 Consistent Help (Level A 2.2 only)	Not Evaluated	
3.3.1 Error Identification (Level A)	Supports	Where errors are automatically detected, the error is identified, and an error message is provided as text.
3.3.2 Labels or Instructions (Level A)	Supports	A label or aria-label is provided for each of the site's inputs.
3.3.7 Redundant Entry (Level A 2.2 only)	Not Evaluated	
4.1.1 Parsing (Level A) WCAG 2.0 and 2.1 – Always answer 'Supports' WCAG 2.2 (obsolete and removed) - Does not apply	Supports	For WCAG 2.0 and 2.1, the September 2023 errata update indicates this criterion is always supported. See the WCAG 2.0 Editorial Errata and the WCAG 2.1 Editorial Errata .
4.1.2 Name, Role, Value (Level A)	Supports	The site components provide programmatic name, role and value information.

Table 2: Success Criteria, Level AA

Notes:

Criteria	Conformance Level	Remarks and Explanations
1.2.4 Captions (Live) (Level AA)	Not Applicable	The site does not provide live audio content.
1.2.5 Audio Description (Prerecorded) (Level AA)	Partially Supports	Video lectures provided by the site include audio descriptions of the video content in most cases because the video merely illustrated the concepts being presented in the synchronized audio.
1.3.4 Orientation (Level AA 2.1 only)	Supports	The site content does not restrict viewing or operation to any particular orientation.
1.3.5 Identify Input Purpose (Level AA 2.1 only)	Supports	The site does not contain input fields that require the user to enter personally identifiable information.

Criteria	Conformance Level	Remarks and Explanations
1.4.3 Contrast (Minimum) (Level AA)	Supports	The text in the site conforms to minimum contrast requirements.
1.4.4 Resize text (Level AA)	Supports	The site content supports standard browser-controlled resizing to 200% without loss of visual context or functionality.
1.4.5 Images of Text (Level AA)	Supports	The site uses text instead of images of text. Exception: in a small number of cases, corporate logos and symbols are presented as images containing text. In these cases, the associated alt tags contain the text.
1.4.10 Reflow (Level AA 2.1 only)	Partially Supports	Most content in the site can be presented without loss of information or functionality using a page width of 320px without horizontal scrolling. A few exceptions exist where the elements themselves are wider than 320px. However, all can be at least partially viewed without horizontal scrolling.
1.4.11 Non-text Contrast (Level AA 2.1 only)	Supports	Meaningful non-text site content has a contrast ratio of at least 3:1.
1.4.12 Text Spacing (Level AA 2.1 only)	Supports	The spacing between letters, words, lines of text and/or paragraphs can be adjusted in the site's webpage.
1.4.13 Content on Hover or Focus (Level AA 2.1 only)	Supports	Pointer hover or keyboard focus does not trigger content to be visible and then hidden. The Homework assignment includes a feature where bringing focus to a question item makes a <textarea> element visible (see item 3.2.1) but the additional content is persistent.
2.4.5 Multiple Ways (Level AA)	Partially Supports	The site content consists primarily of student assignments in which a specific order of pages must be followed. In cases where users may visit multiple pages, links with descriptive labels are provided.
2.4.6 Headings and Labels (Level AA)	Supports	Headings and labels are descriptive throughout the site.
2.4.7 Focus Visible (Level AA)	Supports	All focusable elements in site have a visible keyboard focus indicator.
2.4.11 Focus Not Obscured (Minimum) (Level AA 2.2 only)	Not Evaluated	
2.5.7 Dragging Movements (Level AA 2.2 only)	Not Evaluated	
2.5.8 Target Size (Minimum) (Level AA 2.2 only)	Not Evaluated	

Criteria	Conformance Level	Remarks and Explanations
3.1.2 Language of Parts (Level AA)	Supports	The language of all site content can be determined programmatically.
3.2.3 Consistent Navigation (Level AA)	Supports	The site provides consistent and repeatable navigation.
3.2.4 Consistent Identification (Level AA)	Supports	Components that have the same functionality within the site are identified consistently.
3.3.3 Error Suggestion (Level AA)	Supports	When an error is automatically detected within a data entry form in the site, the resulting error message provides suggestions for correction.
3.3.4 Error Prevention (Legal, Financial, Data) (Level AA)	Supports	No forms within the site submit actions that cause legal commitments. For financial commitments, a mechanism is available for reviewing, confirming, and correcting information before finalizing the submission.
3.3.8 Accessible Authentication (Minimum) (Level AA 2.2 only)	Not Evaluated	
4.1.3 Status Messages (Level AA 2.1 and 2.2)	Not Applicable	The site does provide status messages, but only by changing the label of a button or link that already has focus when it is activated (e.g., "Please wait a moment...")

Table 3: Success Criteria, Level AAA

Notes:

Criteria	Conformance Level	Remarks and Explanations
1.2.6 Sign Language (Prerecorded) (Level AAA)	Not Evaluated	
1.2.7 Extended Audio Description (Prerecorded) (Level AAA)	Not Evaluated	
1.2.8 Media Alternative (Prerecorded) (Level AAA)	Not Evaluated	
1.2.9 Audio-only (Live) (Level AAA)	Not Evaluated	
1.3.6 Identify Purpose (Level AAA 2.1 and 2.2)	Not Evaluated	
1.4.6 Contrast (Enhanced) (Level AAA)	Not Evaluated	
1.4.7 Low or No Background Audio (Level AAA)	Not Evaluated	
1.4.8 Visual Presentation (Level AAA)	Not Evaluated	
1.4.9 Images of Text (No Exception) (Level AAA)	Not Evaluated	
2.1.3 Keyboard (No Exception) (Level AAA)	Not Evaluated	
2.2.3 No Timing (Level AAA)	Not Evaluated	

Criteria	Conformance Level	Remarks and Explanations
2.2.4 Interruptions (Level AAA)	Not Evaluated	
2.2.5 Re-authenticating (Level AAA)	Not Evaluated	
2.2.6 Timeouts (Level AAA 2.1 and 2.2)	Not Evaluated	
2.3.2 Three Flashes (Level AAA)	Not Evaluated	
2.3.3 Animation from Interactions (Level AAA 2.1 and 2.2)	Not Evaluated	
2.4.8 Location (Level AAA)	Not Evaluated	
2.4.9 Link Purpose (Link Only) (Level AAA)	Not Evaluated	
2.4.10 Section Headings (Level AAA)	Not Evaluated	
2.4.12 Focus Not Obscured (Enhanced) (Level AAA 2.2 only)	Not Evaluated	
2.4.13 Focus Appearance (Level AAA 2.2 only)	Not Evaluated	
2.5.5 Target Size (Level AAA 2.1 and 2.2)	Not Evaluated	
2.5.6 Concurrent Input Mechanisms (Level AAA 2.1 and 2.2)	Not Evaluated	
3.1.3 Unusual Words (Level AAA)	Not Evaluated	
3.1.4 Abbreviations (Level AAA)	Not Evaluated	
3.1.5 Reading Level (Level AAA)	Not Evaluated	
3.1.6 Pronunciation (Level AAA)	Not Evaluated	
3.2.5 Change on Request (Level AAA)	Not Evaluated	
3.3.5 Help (Level AAA)	Not Evaluated	
3.3.6 Error Prevention (All) (Level AAA)	Not Evaluated	
3.3.9 Accessible Authentication (Enhanced) (Level AAA 2.2 only)	Not Evaluated	

Legal Disclaimer (Company)

Not Applicable.