

# Selenium Handling SVG

Handling **SVG (Scalable Vector Graphics)** elements in Selenium can be tricky because they don't behave exactly like regular HTML elements. SVG elements are XML-based and part of a different DOM namespace, which means typical locators like `By.id`, `By.className`, etc., may not always work as expected.

Let's walk through everything you need to know, step-by-step.

## ✓ 1. Understanding SVG in the DOM

SVG elements are often used for:

- Charts and graphs (like D3.js)
- Icons (e.g., from FontAwesome, Heroicons)
- Diagrams or vector drawings

Example SVG structure:

```
html
```



## ✓ 2. Why SVG Elements are Special in Selenium

- **SVG elements belong to a different namespace** (<http://www.w3.org/2000/svg>)
- You need **XPath** to locate them reliably.
- **CSS Selectors** often fail with nested SVG tags.

## ✓ 3. XPath for SVG Elements

Here's how to write XPath for SVG elements:

### ✓ Basic XPath for SVG

```
xpath
```

```
//*[local-name()='svg']
```

### ✓ Find circle inside svg

```
xpath
```

```
//*[local-name()='svg']//*[local-name()='circle']
```

## ✓ Find element by attribute (e.g., id)

```
xpath
```

```
//*[local-name()='circle' and @id='circle1']
```

## ✓ 4. Selenium Java Code Examples

### ▶ Setup

```
java
```

```
WebDriver driver = new ChromeDriver();
driver.get("https://example.com");
```

### ▶ Example 1: Click an SVG Element

```
java
```

```
WebElement svgElement = driver.findElement(By.xpath("//*[@local-name()='svg']//*[local-name()='circle']"));
svgElement.click();
```

### ▶ Example 2: Get Text from SVG

```
java
```

```
WebElement text = driver.findElement(By.xpath("//*[@local-name()='svg']//*[local-name()='text']"));
System.out.println("SVG Text: " + text.getText());
```

## ✓ 5. Using JavaScriptExecutor (for dynamic interaction)

SVG elements can sometimes fail to receive `.click()` or `.sendKeys()`. In such cases, use **JavaScriptExecutor**.

```
java
```

```
JavaScriptExecutor js = (JavaScriptExecutor) driver;
WebElement svgElement = driver.findElement(By.xpath("//*[@local-name()='svg']//*[local-name()='circle']"));
js.executeScript("arguments[0].click();", svgElement);
```

## ✓ 6. Wait Until SVG Element is Visible

SVG elements can be dynamic, so always wait for them:

```
java

WebDriverWait wait = new WebDriverWait(driver, Duration.ofSeconds(10));
WebElement circle = wait.until(ExpectedConditions.visibilityOfElementLocated(
    By.xpath("//*[local-name()='circle' and @id='circle1']")
));
```

## ✓ 7. Handling SVGs inside iframes

If the SVG is inside an <iframe>, switch first:

```
java

driver.switchTo().frame("iframe-id"); // or use index
WebElement svgElement = driver.findElement(By.xpath("//*[local-name()='svg']"));
```

## ✓ 8. Sample Web Page with SVG for Practice

Try it on this page:

- [https://www.w3schools.com/graphics/tryit.asp?filename=trysvg\\_circle](https://www.w3schools.com/graphics/tryit.asp?filename=trysvg_circle)

This will give you a hands-on experience with <svg><circle></circle></svg>.

## Assignments / Practice Tasks

### ◆ Task 1: Locate and get color of SVG circle

**Page:** [https://www.w3schools.com/graphics/tryit.asp?filename=trysvg\\_circle](https://www.w3schools.com/graphics/tryit.asp?filename=trysvg_circle)

**Goal:** Fetch the `fill` attribute of the circle.

```
java

WebElement circle = driver.findElement(By.xpath("//*[local-name()='circle']"));
String fillColor = circle.getAttribute("fill");
System.out.println("Circle Fill Color: " + fillColor);
```

### ◆ Task 2: Interact with chart.js or D3.js elements

Find any sample chart (bar/pie chart) made with D3 or chart.js and try to:

- Hover over bars (using **Actions**)
- Click on sections
- Read tooltip data (if possible)



## Summary

Concept	Details
SVG location	Use <code>//*[local-name()='tag']</code> in XPath
Interactions	Use <code>click()</code> , <code>getAttribute()</code> , or <code>JavaScriptExecutor</code>
Issues	Standard locators may not work
Inside iframe	Use <code>switchTo().frame()</code> before locating
Waits	Prefer <code>WebDriverWait</code> with visibility check

Would you like a **hands-on Selenium test project** that interacts with SVG charts/icons step-by-step?