

# DX-2106H

## NITTO HYDROGEN DETECTION TAPE

### APPLICATION TECHNIQUES

- Ensure that the substrate surface is clean, dry and free of any debris, oils, loose particles, etc.
- Nitto's hydrogen detection tape is a Pressure Sensitive Adhesive (PSA) tape and requires pressure applied by hand or roller.
- Not every situation will allow for DX-2106H to be easily wrapped around the substrate. In challenging areas, apply DX-2106H using the "Butterfly Wrap" (shown right) method. This not only will help encapsulate the surface, but it also helps with preventing any escape route for hydrogen gas, thereby allowing you to identify a potential leak.
- Wrinkles or pop-ups, when applying the tape, may cause the color-change more easily. This can be recognized because the color-changed area will become irregular, which allows for leaking gas to contact more of the tape.
- To see contrast of the color-changed area versus the non-changed area, apply tape around an area larger than the expected leak location. If the color of the whole tape is changed, it may be difficult to recognize the leak point. It is better to apply the tape over a wider area.



### PRECAUTION REMINDER

- This product is intended for use as a localized hydrogen gas indicator and should be used as part of a comprehensive gas detection system. Note: It is not able to prevent gas leaks.
- Color change speed depends on hydrogen gas % concentration, flow rate, and temperature. Higher concentration, flow rate, and temperature cause a faster color-change. 1% hydrogen balance in 99% air may not cause a change in color, depending on the condition.
- Although this tape has been tested for its hydrogen gas detection ability under 60°C, 40°C x 95%RH and -5°C for 3 months or more, the product is only warrantied to conform to speciation's defined by Nitto.
- When a color-change is observed, it is highly recommended to recheck for hydrogen gas leak with a hydrogen gas detector.
- Under high temperatures (~ 200°C/ 392°F), organic materials including but not limited to finger prints adsorb on the adhesive surface and can generate gases that may potentially cause the tape to change color.
- "Spot" color-change may be observed under high temperature conditions or after long term outside UV exposure (shown right). A "Spot" color-change is not caused by a hydrogen gas leak. In case of a gas leak, an "area" color-change is observed.

"Spot" color change example



- Certain pipe metals at a continuous high operating temperature environment (greater than 100°C/ 212°F) may cause a color-change on the tape even if a gas leak is not present.
- Longer term high operating temperature (over 60°C/ 140°F) or outdoor operation where exposed to UV and/or rain may cause tape color-change to be slower. Also, it may generate adhesive residue. Adhesive residue can be easily removed by rubbing.
- When foreign particles such as dust, sand, rust, etc. adhere to the tape's surface, they may cause the color-change to be slower.
- Once DX-2106H is applied on a surface, do not remove and re-apply it as it may introduce foreign particles onto the adhesive, influencing adhesion and Hydrogen detection performance.
- In case tape is applied on non-stainless steel pipes, colored water may be generated from the steel when it rains. Tape may be dyed with this colored water and it would be difficult to recognize a color- change by a hydrogen gas leak.
- Aluminum and galvanized metal, in wet conditions, cause color-change on the tape even if a gas leak is not present.
- The influence of all kinds of paints have not been evaluated. Some paints may influence hydrogen detection sensitivity. Especially, the outgas (odor) from the paint may prevent hydrogen from entering the adhesive layer and decrease its detection sensitivity.
- The color of the DX-2106H can change if exposed to other reducing gases such as hydrogen sulfide, carbon monoxide, etc. Please do not use this tape for detecting other reducing gases, like silane. Such gases have not been tested and may react with the tape aggressively.
- In case the tape comes into direct contact with some cardboard material, a premature discoloration may occur. When the product is removed from its original box, it is recommended to store in a polyethylene bag.
- Minimize overwrapping the tape for easier identification of color-change. If overwrapped, squeeze out the air between layers to improve detection capabilities and to help see the color-change more clearly.
- Please note that high speed rewinding may cause a static discharge to occur.
- To remove fragile tape, apply a secondary off-the-shelf adhesive tape on top and peel off. For removing residues apply organic solvent such as alcohols.

### ENVIRONMENTAL GUIDELINE

- For optimal adhesion to the substrate, it is suggested to apply DX-2106H at ambient temperatures, 50% relative humidity, allowing at least 24 hours to obtain optimal adhesion strength.
- Once applied, DX-2106H can be exposed and function within temperatures ranging from -40°C to 100°C (- 40°F to 212°F) with short-term exposure to temperatures of up to 200°C (392°F).

### GENERAL STORAGE CONDITIONS

- Best stored between 50°F-80°F / 10°C-27°C, 25-50% relative humidity; out of direct sunlight.