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| PRODUCT INFORMATION | TYPE OF PRODUCT | Spray insulation |
| | COMPANY NAME | Icynene |
| | PRODUCT/COLLECTION NAME | ICYNENE LD-R-50 |
| | DESCRIPTION | ICYNENE LD-R-50™ is Icynene's next generation of high-performance spray insulation. ICYNENE LD-R-50™ is a renewable-based foam insulation and air barrier material that is responsibly made using castor oil and offers numerous environmental benefits for residential applications. |
| MATERIAL FEEDSTOCK | MATERIAL CONTENT | Castor oil has been used in place of a portion of the petroleum-based polyol. ICYNENE LD-R-50™ exceeds the minimum renewable requirement for a bio-based material (testing in accordance with ASTM D 6866). Extracted from the castor plant, castor oil is a natural ingredient that is safe enough for use in personal care products such as lip balm. Production of the castor plant has low energy dependence and requires no pesticides, fungicides or man-made irrigation. The castor oil used for ICYNENE LD-R-50™ has a make-up which is extremely consistent year over year, from location to location and has a higher yield by weight (~40%) than soya oil (~17%). |
| | RECYCLED CONTENT % | 0% |
| | RAPIDLY RENEWABLE CONTENT % | <p>Castor oil, almost 100%</p> <p>Castor oil facts</p> <p>For every kilogram of castor oil produced in place of a petroleum-based polyol, there is a reduction of nearly 3.5 kilograms of Carbon Dioxide (CO2) from the atmosphere.</p> <ul style="list-style-type: none"> • Castor oil is 100% naturally filtered, with no chemical additives required. • The estimated carbon dioxide absorption level of castor bean plants is 34.6 tonnes per hectare, with two growing cycles per year (source: www.DoveBiotech.com) • The castor oil used for ICYNENE LD-R-50™ has a yield (by weight) of ~40% vs. • ~17% yield with soya oil. • The castor oil used for ICYNENE LD-R-50™ is processed under the guidelines of the Responsible Care® Initiative (www.responsiblecare.org). • The production process of the castor oil has low energy dependence, consisting simply of de-husking and pressing. Harvesting can be done manually. • Castor crops are non-irrigated (relying only on natural rainfall), saving scarce water supplies. • Castor crops do not require treatment with pesticides or fungicides. • Castor crops do not compete with food crops, as they can be grown on marginal lands not competitive with food production lands. • Castor beans are a rapidly renewable material, as per the U.S. Green Building Council's (USGBC) definition, which requires a 10-year or shorter re-growth time frame. • A cradle-to-gate study commissioned by the Department of Energy (DOE) reported that there are essentially zero net greenhouse gas emissions from the production of the castor oil. |
| | HARMFUL ADDITIVES | Polyurethane? |
| | HARMFUL EMISSIONS | It is an Environmentally Preferable Product (CHPS EQ 2.2 Section 01350 Compliant) that is 100% water-blown, free from HFCs and PBDEs. |
| | EMISSION STRENGTH OVER TIME | N/A |
| | TREATMENTS | None |
| MANUFACTURING | MANUFACTURING PROCESS | Manufactured |
| | HARMFUL EMISSIONS | Unknown |
| | LOCATION OF MANUF. PLANT | |
| | TESTS/CODES | ASTM D 6866 |

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| | 3RD PARTY CERTIFICATION | |
| <u>INSTALLATION</u> | INSTALLATION PROCEDURE | Spray insulation into walls and attic spaces before installing sheet rock |
| | INSTALLATION ADHESIVES | No adhesives |
| | UNIT COST | |
| | LIFE CYCLE ANALYSIS EXTRACTION | Made of renewable materials, long life |
| | END OF SERVICE LIFE | Not recyclable |
| <u>MISC. PROPERTIES</u> | QUALITIES/PROPERTIES OF PRODUCT | Long lasting, mold and mildew resistant |
| | MISC. COMMENTS | -It insulates and air-seals in one step for maximum energy conservation while minimizing the environmental impact. -By significantly reducing air leakage, ICYNENE LD-R-50™ contributes to a healthier, quieter and more comfortable indoor environment, while reducing energy consumption and related greenhouse gas emissions by as much as 50%. |
| | CONTRIBUTION TO LEED POINTS | EA may reduce energy bill by up to 50% |
| <u>COMPANY PROFILE</u> | GREEN PHILOSOPHY | Icynene delivers high-performance solutions for efficient building envelopes, thermal comfort and a healthy living environment – all of which are integral components of green building and design. Icynene can also contribute points/credits to LEED for Homes + the NAHB National Green Building Standard. |
| | CONTACT | http://www.icynene.com/ 1-800-758-7325 6747 Campobello Road Mississauga ON L5N 2L7 Canada |
| <u>MAINTENANCE</u> | AFTER INSTALLATION | N/A |