



ENVIRONMENTAL IMPACT QUESTIONNAIRE (EIQ)

I. DIRECTIONS

A. Complete the following questionnaire and submit for review to:

Anning Yung _____

B. Relate information concerning only one product per questionnaire.

C. All questions may not apply to every product or manufacturer. It is not expected the manufacturer will have addressed all of the environmental concerns expressed in the EIQ.

1. Respond to every question even if response is “not available”, “not applicable”, or “no”.

2. Attach additional sheets as required. Reference additional sheets to correspond with the question number.

II. IDENTIFICATION

A. Material/Product: Wheat straw fiberboard; an alternative to wood-based Wheat particleboard.

Brand Name: WOODSTALK

Manufacturer: Dow Chemical Company

What is the primary use or application for this product?

'Gold MR Fiberboard' is utilized for cabinetry, furniture, case goods, store fixtures, countertops, shelving, and other non-structural design applications.

B. Contact for EIQ:

Name: Dave Miller_____

Title: Technical Representative_____

Address: 215 State Midland, Michigan Zip Code: 48640

Telephone: 1-800-441-4369 (4DOW) FAX: 1-989-832-1465

Date: January 17, 2005

III. RESOURCE MANAGEMENT

A. Renewable Resources:

1. List renewable resources used as product raw materials. Provide percentage amounts in relation to complete (100 percent) product.

<u>Renewable Resource</u>	<u>Percentage</u>
Wheat straw_____	93%_

2. Does manufacturer obtain raw materials or fabricate this product outside of the United States:

Y N?

- a. If yes, are United States environmental standards or more strict standards followed in these countries: Y N?

- b. List countries involved.

Canada_____

B. Managed Resources:

1. Does extraction of product raw materials or fabrication of this product affect endangered specie(s): Y N?

- a. If yes, list species and describe effect, including methods for negative effects.

<u>Endangered Species</u>	<u>Effect</u>
_____	_____

2. Products Containing Wood: Are wood materials obtained from certified sustainable forestry operations: ___Y ___X___N?

a. If yes, provide name of certification organization for each wood species being used in this project.

Species

Certification Organization

_____	_____
_____	_____
_____	_____

b. If no, state where the product resources are produced and describe forestry operations.

Product Resources

Forestry Operations

_____	_____
_____	_____
_____	_____

C. Recycled Content:

1. List recycled materials used as product raw materials; distinguish pre-consumer and post-consumer materials. Provide percentage amounts in relation to complete (100 percent) product.

Recycled Material

% Pre-Consumer

% Post-Consumer

_____	_____	_____
_____	_____	_____
_____	_____	_____

D. Embodied Energy:

1. Product Transport:

a. Where are raw materials acquired? Identify state and country.

Raw Material

Source (State and Country)

Wheat straw _____

Minnesota and North Dakota _____

_____	_____
_____	_____
_____	_____

b. Describe means of transporting raw materials to the manufacturing plant.

Raw Material

Transportation

c. Where is product manufactured/fabricated? Identify state and country.

Elie, Manitoba and Canada

d. Is the product warehoused locally, regionally, or nationally?

Locally and nationally

e. Describe means of transporting product to distribution facilities.

2. Production Energy: List energy sources used in production process; indicate which are renewable energy sources (e.g. wind, solar). Provide percentage amounts in relation to complete (100 percent) product.

Energy Sources

Renewable

Percentage

<hr/>	<hr/> <input type="checkbox"/> Y <input type="checkbox"/> N	<hr/>
<hr/>	<hr/> <input type="checkbox"/> Y <input type="checkbox"/> N	<hr/>
<hr/>	<hr/> <input type="checkbox"/> Y <input type="checkbox"/> N	<hr/>

3. Provide an embodied energy study of the product from extraction of raw materials through production and assembly. Include an estimate for the total number of BTU's required per pound of finished products. Identify parameters for study.

4. Describe measures the manufacturer has taken to minimize energy usage in the production process.

E. Reuse/Recyclability/Disposal:

1. Reuse:

- a. Can product be reused directly (in same or similar use): ___Y ___X___N?
- b. If yes, discuss the possibility of direct reuse of the product after project demolition.

2. Recycling:

- a. Can product be recycled: ___Y ___X___N?
- b. If yes, list the parts of the product which can be post-consumer recycled into raw materials for the product and the parts which can be post-consumer recycled into other types of items. Provide percentage amounts in relation to complete (100 percent) product.

<u>Post-Consumer - Raw</u>	<u>Post-Consumer - Other</u>	<u>Percentage</u>
Wheat straw_____	_____	93%_____
_____	_____	_____
_____	_____	_____

- c. If yes, describe the process of separation of the parts for post-consumer recycling from the product.

- d. If yes, list current markets using recycled materials from the product.

- e. If yes, estimate the practical number of times this item can be recycled. _____

3. Describe the manufacturer's policy and program to facilitate the recycling or reuse of its product by accepting product returns at the end of their "useful life".

IV. TOXICITY/HAZARDOUS MATERIALS

A. Toxic/Hazardous By-Products:

1. List the production wastes involved with the manufacture of this item. Distinguish the production wastes between toxic and non-toxic. Provide percentage amounts in relation to complete (100 percent) product.

<u>Toxic</u>	<u>Non-Toxic</u>	<u>Percentage</u>
No hazardous materials used	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

2. Estimate the quantity of production waste produced per unit of finished product.

unknown

3. Is reclamation of production waste done on site: ___Y ___N? With outside services: ___Y ___N?

- a. If outside services are used, list companies involved.

4. Is waste water reclaimed by manufacturer: ___Y ___N?

- a. If yes, describe the process of recycling/reuse of waste water.

5. Describe the manufacturer's active steps to minimize or eliminate production wastes; include process of liquid and solid waste material treatment or reclamation if performed at manufacturing site.

6. Describe the manufacturing procedures and chemicals involved that would be considered better than industry standard.

WOODSTALK 'Gold MR Fiberboard are made with a polyurethane resin as a binder instead of the conventional formaldehyde binders. Thus, reducing the amount of carbon monoxide and VOCs emitted into the air.

B. Toxic/Hazardous Contents (carcinogens and other hazards inherent in product/material):

1. Provide a complete chemical profile of the item; include all chemical components and provide percentage amounts in relation to complete (100 percent) product; identify biocides (mildewcides or in-can preservatives) and carcinogens listed by any of the following:

- a. United States Environmental Protection Agency (EPA) Carcinogen Assessment Group (CAG) list of carcinogens.
- b. Clean Air Act Sections 109, 111, and 112.
- c. The National Toxicology Program's latest published "Annual Report on Carcinogens".
- d. IARC Human Carcinogens (Group 1, 2A, and 2B).
- e. California Proposition 65.

<u>Chemical</u>	<u>Carcinogen</u>	<u>Percentage</u>
_____	___ Y ___ N	_____
_____	___ Y ___ N	_____
_____	___ Y ___ N	_____
_____	___ Y ___ N	_____
_____	___ Y ___ N	_____
_____	___ Y ___ N	_____

C. Material Safety Data Sheet (MSDS):

1. Provide Material Safety Data Sheet (MSDS).

- a. Articles: Finished products which are manufactured off-site and shipped to the project for installation while conforming to Title 29 of the Code of Federal Regulations, OSHA Hazard Communication Regulation 29CFR 1910.1200, Section (b)5 and Section (c) are defined as articles. If by being defined as an article, a MSDS has not been developed for a particular product, then provide MSDS on raw materials, goods, and items used in the fabrication of that article.

D. Outgassing/Reactivity:

1. Chlorofluorocarbon (CFC):

- a. Are CFC's or HCFC's used in the manufacture and/or content of the item specified:
___Y __X__N?

- b. If CFC's or HCFC's were previously used in the product and/or its manufacture, describe measures taken by manufacturer to eliminate their use.

2. Indoor Air Quality:

- a. Does the product outgas (emit) carcinogens or other hazardous substances into the air after installation, including final curing/drying: ___Y __X__N?
- b. If yes, submit IAQ test report.

E. Electromagnetic Radiation:

- 1. Does the product emit electromagnetic radiation: ___Y __X__N?
- 2. If yes, at what rate per hour? _____
- 3. If yes, describe methods for installation, use, and maintenance of product to minimize generation of and occupant exposure to electromagnetic radiation.

F. Compliance with Regulations (Environmental Statutory Compliance):

1. Does the manufacturer meet all federal, state, and local environmental laws, including laws governing air emissions, waste water treatment, and solid waste disposal/treatment:
_X_Y ___N?
2. Has the manufacturer met the above criteria for the previous five years: __X__Y ___N?
3. List the applicable standard.

4. Does the product meet applicable industry standards, such as ASTM, Green Seal, manufacturing standards, LA or NY research report numbers, and UL approvals: ___Y ___N? List these standards.

V. PERFORMANCE - INSTALLATION

A. Environmental Procedures/Precautions:

1. Describe special procedures and precautions to be used while handling and installing the product:
Easier to use and customize than traditional particleboard_____

2. Identify accessories, such as fasteners, sealers, and adhesives that are non-toxic (or less toxic than industry standard), energy efficient, or recycled or recyclable products?

B. Installation Energy:

1. Product Transport: List the means to transport the finished product to the construction site.

Truck _____

2. Installation: List energy means and describe energy requirements for installation of the product.

Similar to particleboard _____

C. Construction Waste:

1. List the recommended method(s) for proper products disposal; stipulate preferred method and restrictions which might apply.

2. Comment on the environmental impact of the product as a waste material.

3. Packaging:

a. Describe packaging for the product.

b. Does manufacturer accept return of used packaging for reuse: ___Y ___N?

c. If yes, state limitations and procedures for packaging return.

VI. PERFORMANCE - OPERATIONS

A. Maintenance

- 1. Describe the recommended cleaning and maintenance for the product using products which have minimal VOC emission.

- 2. Estimate the "useful life" expectancy for this product.

Retail: 3-5 years Home use: substantially longer in comparison to retail lifespan

- 3. Are replacement parts available: ___Y ___N?

a. If yes, can replacement parts be installed in the field: ___Y ___N?

- 4. Provide a copy of the life cycle analysis for this product.

- 5. Provide a copy of the manufacturer's warranty for this product.

B. Energy Efficiency (energy required to operate/maintain):

- 1. Estimate BTU's required to operate the product when new? _____; after five years? _____; after ten years? _____

C. Compliance with Regulations (Environmental Statutory Compliance):

- 1. Does the product meet all federal, state, and local environmental laws, including laws governing energy efficiency and air emissions: __X__Y ___N?

- 2. Has the product met the above criteria for the previous five years: ___Y ___N?

- 3. List the applicable standards.

VII. CORPORATE COMMITMENT

A. Corporate Environmental Policy:

1. Provide copy of manufacturer's stated environmental policies.

<http://www.dow.com/webapps/lit/litorder.asp?filepath=bioprod/pdfs/noreg/697-00045.pdf&pdf=true>

END OF ENVIRONMENTAL IMPACT QUESTIONNAIRE

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

24-HOUR EMERGENCY PHONE NUMBER: 989-636-4400
Product: WOODSTALK(TM) ZS 100 ENGINEERED FIBERBOARD
Product Code: 53974
Effective Date: 07/11/02 Date Printed: 03/18/04 MSD: 006975

The Dow Chemical Company, Midland, MI 48674
Customer Information Center: 800-258-2436

2. COMPOSITION/INFORMATION ON INGREDIENTS

Wheat straw board containing polyurea resin 100%

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

***** Solid straw board. Mild characteristic odor.

Toxic fumes may be * * released in fire situations. *

POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE: Dust generated in processing may cause irritation or corneal injury due to mechanical action.

SKIN: Solid or dusts may cause skin irritation due to mechanical abrasion. No adverse effects anticipated by skin absorption.

INGESTION: Swallowing is unlikely because of the physical state.

INHALATION: Dust generated by mechanical handling may cause irritation of the upper respiratory tract (nose and throat).

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: No relevant information found.

CANCER INFORMATION: No relevant information found.

TERATOLOGY (BIRTH DEFECTS): No relevant information found.

REPRODUCTIVE EFFECTS: No relevant information found.

4. FIRST AID

EYE: Flush eyes with plenty of water; remove contact lenses after the first 1-2 minutes then continue flushing for several minutes. Only mechanical effects expected.

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MATERIAL SAFETY DATA SHEET PAGE: 2

Product Name: WOODSTALK(TM) ZS 100 ENGINEERED FIBERBOARD Product Code: 53974

Effective Date: 07/11/02 Date Printed: 03/18/04 MSD: 006975

4. FIRST AID (CONTINUED)

SKIN: Wash skin with plenty of water.

INGESTION: No emergency medical treatment necessary.

INHALATION: Move person to fresh air; if effects occur, consult a physician.

NOTE TO PHYSICIAN: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: Not applicable.

METHOD USED: Not applicable.

AUTOIGNITION TEMPERATURE: >392F, >200C

FLAMMABILITY LIMITS

LFL: Not applicable.

UFL: Not applicable.

HAZARDOUS COMBUSTION PRODUCTS: During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to phenolics, carbon monoxide, carbon dioxide and polycyclic aromatic compounds. Hazardous combustion products may include trace amounts of nitrogen oxides and hydrogen cyanide.

OTHER FLAMMABILITY INFORMATION: Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate.

EXTINGUISHING MEDIA: Water, carbon dioxide, dry chemical.

FIRE FIGHTING INSTRUCTIONS: Keep people away. Isolate fire area and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Hand held carbon dioxide or dry chemical extinguishers may be used for small fires.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire

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M A T E R I A L S A F E T Y D A T A S H E E T PAGE: 3

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5. FIRE FIGHTING MEASURES (CONTINUED)

fighting equipment (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES (See Section 15 for Regulatory Information)

PROTECT PEOPLE: See MSDS Section 10 for information on stability and reactivity.

PROTECT THE ENVIRONMENT: For additional information see Regulatory Information, MSDS Section 15.

CLEANUP: Sweep up. Place in properly labeled containers.

7. HANDLING AND STORAGE

HANDLING: This product is combustible and may constitute a fire hazard if improperly used or installed. When installed, this product should be adequately protected as directed by national building regulations or instructions in the specific application brochure. No smoking, open flame or sources of ignition in handling and storage area.

Mechanical handling equipment can cause formation of dusts. Maintain good housekeeping. Layers of flammable dusts should not be permitted to accumulate. Keep dust away from ignition sources. Provide adequate local ventilation and appropriate dust handling systems.

STORAGE: Store flat with adequate support. Store in a dry place. Keep away from possible ignition sources. Keep away from open flames and spark producing equipment. Store in a cool, well ventilated area, away from sources of ignition. Proper ventilation is recommended to control dust formation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

PERSONAL PROTECTIVE EQUIPMENT

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION (CONTINUED)

EYE/FACE PROTECTION: Use safety glasses. If there is a potential for exposure to particles which could cause mechanical injury to the eye, wear chemical goggles.

SKIN PROTECTION: No precautions other than clean body-covering clothing should be needed.

RESPIRATORY PROTECTION: In dusty atmospheres, use an approved particulate respirator.

EXPOSURE GUIDELINE(S): ACGIH TLV is 10 mg/m3 inhalable, 3 mg/m3 respirable for Particulates (insoluble) Not Otherwise Classified (PNOC). OSHA PEL is 15 mg/m3 total, 5 mg/m3 respirable for PNOC.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Solid, straw board

ODOR: Mild characteristic odor

VAPOR PRESSURE: Not applicable

VAPOR DENSITY: Not applicable

BOILING POINT: Not applicable

SOLUBILITY IN WATER: Not applicable

SPECIFIC GRAVITY: Not applicable

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Thermally stable at typical use temperatures.

CONDITIONS TO AVOID: Avoid temperatures above 200C (392F). Product can decompose at elevated temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Avoid contact with drying oils and oxidizing materials.

HAZARDOUS DECOMPOSITION PRODUCTS: Hazardous decomposition products depend upon temperature, air supply and the presence of other materials.

HAZARDOUS POLYMERIZATION: Will not occur.

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11. TOXICOLOGICAL INFORMATION (See Section 3 for Potential Health Effects. For detailed toxicological data, write or call the address or non-emergency number shown in Section 1)

MUTAGENICITY: No relevant information found.

12. ECOLOGICAL INFORMATION (For detailed Ecological data, write or call the address or non-emergency number shown in Section 1)

ENVIRONMENTAL FATE

MOVEMENT & PARTITIONING: No bioconcentration is expected because of the relatively high molecular weight (MW >1000). In the terrestrial environment, material is expected to remain in the soil.

DEGRADATION & PERSISTENCE: No appreciable biodegradation is expected.

ECOTOXICITY: Not expected to be acutely toxic to aquatic organisms.

13. DISPOSAL CONSIDERATIONS (See Section 15 for Regulatory Information)

DISPOSAL: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterize-ations and compliance with applicable laws are the responsibility solely of the waste generator. THE DOW CHEMICAL COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/Information On Ingredients).

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: recycler, reclaimer, incinerator, landfill.

As a service to its customers, Dow can provide lists of companies which recycle, reprocess or manage chemicals or plastics, and companies that manage used drums. Telephone Dow's Customer Information Center at 800-258-2436 or 989-832-1556 for further details.

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Product Name: WOODSTALK(TM) ZS 100 ENGINEERED FIBERBOARD Product Code: 53974

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14. TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION (D.O.T.): This product is not regulated by D.O.T. when shipped domestically by land.

15. REGULATORY INFORMATION (Not meant to be all-inclusive—selected regulations represented)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above.

However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

U.S. REGULATIONS

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SARA 313 INFORMATION: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Not to have met any hazard category

CALIFORNIA PROPOSITION 65: The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986:

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

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M A T E R I A L S A F E T Y D A T A S H E E T P A G E : 7

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REGULATORY INFORMATION:(CONTINUED)

TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

STATE RIGHT-TO-KNOW: This product is not known to contain any substances subject to the disclosure requirements of New Jersey

Pennsylvania

OSHA HAZARD COMMUNICATION STANDARD:

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CANADIAN REGULATIONS

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WHMIS INFORMATION: The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is:

This product is exempt under WHMIS.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA):

All substances in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. OTHER INFORMATION

MSDS STATUS: Revised Section 15 (added Canadian regulatory information).

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The Information Herein Is Given In Good Faith, But No Warranty, Express Or Implied, Is Made. Consult The Dow Chemical Company For Further Information.

