Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 17.12.2009 *Revision: 30.10.2009*

1 Identification of the substance/preparation and of the company/undertaking

· **Product details**

· **Name of chemical substance:** **Y023 0.01 mol/L KCl**

· **Article number:** 3014083437 (9076005300), 3014081709 (9076008500)
· **MSDS No:** IMSDS-10148
· **Application of the substance / the preparation** Standard sample

· **Manufacturer/Supplier:**
HORIBA, Ltd.
2 Miyanohigashi, Kisshoin,
Minami-ku Kyoto, Japan, KYOTO
601-8510 JAPAN
techinfo.hor@jp.horiba.com

· **Further information obtainable from:** Water and Temperature Measurement R&D Dept.
· **Information in case of emergency:** During normal opening times: +81 75 313-8121

2 Hazards identification

· **Hazard description:** Not applicable.
· **Information concerning particular hazards for human and environment:**
The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
· **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.
· **GHS label elements** Void

3 Composition/information on ingredients

· **Chemical characterization**
· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:** Void
· **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

· **General information:** No special measures required.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Generally the product does not irritate the skin.
· **After eye contact:** Rinse opened eye for several minutes under running water.
· **After swallowing:** If symptoms persist consult doctor.

5 Fire-fighting measures

· **Suitable extinguishing agents:**
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

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Name of chemical substance: Y023 0.01 mol/L KCl

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· ***Protective equipment:*** *No special measures required.*

6 Accidental release measures

· ***Person-related safety precautions:*** *Not required.*
· ***Measures for environmental protection:*** *Dilute with plenty of water.*
· ***Measures for cleaning/collecting:***
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
· ***Additional information:*** *No dangerous substances are released.*

7 Handling and storage

· ***Handling:***
· ***Information for safe handling:*** *No special measures required.*
· ***Information about fire - and explosion protection:*** *No special measures required.*

· ***Storage:***
· ***Requirements to be met by storerooms and receptacles:*** *No special requirements.*
· ***Information about storage in one common storage facility:*** *Not required.*
· ***Further information about storage conditions:*** *None.*
· ***Class according to regulation on flammable liquids:*** *Void*

8 Exposure controls/personal protection

· ***Additional information about design of technical facilities:*** *No further data; see item 7.*

· ***Ingredients with limit values that require monitoring at the workplace:***
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· ***Additional information:*** *The lists valid during the making were used as basis.*

· ***Personal protective equipment:***
· ***General protective and hygienic measures:***
The usual precautionary measures are to be adhered to when handling chemicals.
· ***Respiratory protection:*** *Not required.*
· ***Protection of hands:***
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· ***Material of gloves***
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· ***Penetration time of glove material***
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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Name of chemical substance: Y023 0.01 mol/L KCl

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· **Eye protection:** Goggles recommended during refilling

9 Physical and chemical properties

· **General Information**	
Form:	Liquid
Colour:	Colourless
Odour:	Odourless
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· **Flash point:**	Not applicable.
· **Self-igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Density:**	Not determined.
· **Solubility in / Miscibility with water:**	Fully miscible.

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Dangerous reactions** No dangerous reactions known.
· **Dangerous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.
When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.

12 Ecological information

· **General notes:** Generally not hazardous for water

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Name of chemical substance: Y023 0.01 mol/L KCl

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13 Disposal considerations

· ***Product:***
· ***Recommendation*** *Smaller quantities can be disposed of with household waste.*

· ***Uncleaned packaging:***
· ***Recommendation:*** *Disposal must be made according to official regulations.*
· ***Recommended cleansing agents:*** *Water, if necessary together with cleansing agents.*

14 Transport information

· ***Land transport ADR/RID (cross-border)***
· ***ADR/RID class:*** -

· ***Maritime transport IMDG:***
· ***IMDG Class:*** -
· ***Marine pollutant:*** *No*

· ***Air transport ICAO-TI and IATA-DGR:***
· ***ICAO/IATA Class:*** -

· ***UN "Model Regulation":*** -

15 Regulatory information

· ***Labelling according to EU guidelines:***
Observe the general safety regulations when handling chemicals.
The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (German GefStoffV).

· ***National regulations:***

· ***Classification according to VbF:*** *Void*

· ***Waterhazard class:*** *Generally not hazardous for water.*

16 Other information

HORIBA, Ltd. provides the information contained herein in good faith but makes no representation as to its comprehensives or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.
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· ***Department issuing MSDS:*** *Water and Temperature Measurement R&D Dept.*

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Name of chemical substance: Y023 0.01 mol/L KCl

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· ***Abbreviations and acronyms:***
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
VbF: Verordnung über brennbare Flüssigkeiten, Österreich (Ordinance on the storage of combustible liquids, Austria)

· ***Sources***
RTECS
A chemistry large dictionary (KIORITZ CORP. publication 1963)
Safety data sheet guidebook edited by the information center of the Society for Japan Chemical Industry

· **** Data compared to the previous version altered.***
Data: Dec. 14, 2009
Reviced: Dec. 17, 2009

PRODUCT SAFETY DATA SHEET

PRODUCT NAME: Energizer Battery **Type No.:** **Volts:** 3.0

TRADE NAMES: Energizer Lithium Manganese Dioxide Batteries **Approximate Weight: 0.6 – 40 g.**

CHEMICAL SYSTEM: Lithium Manganese Dioxide **Designed for Recharge:** No

SECTION 1- MANUFACTURER INFORMATION

Manufactured for
Energizer Battery Manufacturing, Inc.
25225 Detroit Rd.
Westlake, OH 44145

Telephone Number for Information:
800-383-7323 (USA / CANADA)

Date Prepared: January, 2011

SECTION 2 – HAZARDS IDENTIFICATION

Under normal conditions of use, the battery is hermetically sealed.

Ingestion: Swallowing a battery can be harmful.
Inhalation: Contents of an open battery can cause respiratory irritation.
Skin Contact: Contents of an open battery can cause skin irritation.
Eye Contact: Contents of an open battery can cause severe irritation.

SECTION 3 - INGREDIENTS

IMPORTANT NOTE: The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

MATERIAL OR INGREDIENT	PEL (OSHA)	TLV (ACGIH)	% / wt.
Carbon Black (CAS# 1333-86-4)	3.5 mg/m^3 TWA	3.5 mg/m^3 TWA	0-1
1,2-Dimethoxyethane (CAS# 110-71-4)	None established	None established	0-6
1,3-Dioxolane (CAS# 646-06-0)	None established	None established	0-8
Graphite (CAS# 7782-42-5)	15 mg/m^3 TWA (total dust) 5 mg/m^3 TWA (respirable fraction)	2 mg/m^3 TWA (respirable fraction)	0-3
Lithium or Lithium Alloy (CAS# 7439-93-2)	None established	None established	1-6
Lithium Trifluoromethanesulfonate (CAS# 33454-82-9)	None established	None established	0-3
Lithium Trifluoromethanesulfonimide (CAS# 90076-65-6)	None established	None established	0-3
Manganese Dioxide (CAS# 1313-13-9)	5 mg/m^3 Ceiling (as Mn)	0.2 mg/m^3 TWA (as Mn)	12-42
Propylene Carbonate (CAS# 108-32-7)	None established	None established	0-8
Non-Hazardous Components: Steel (iron CAS# 7439-89-6) Plastic and Other	 None established None established	 None established None established	 20 Balance

SECTION 4 – FIRST AID MEASURES

Ingestion: Do not induce vomiting or give food or drink. Seek medical attention immediately. CALL NATIONAL BATTERY INGESTION HOTLINE for advice and follow-up (202-625-3333) collect day or night.
Inhalation: Provide fresh air and seek medical attention.
Skin Contact: Remove contaminated clothing and wash skin with soap and water.
Eye Contact: Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

Note: Carbon black is listed as a possible carcinogen by International Agency for Research on Cancer (IARC).

SECTION 5- FIRE FIGHTING MEASURES

In case of fire where lithium batteries are present, flood area with water or smother with a Class D fire extinguishant appropriate for lithium metal, such as Lith-X. Water may not extinguish burning batteries but will cool the adjacent batteries and control the spread of fire. Burning batteries will burn themselves out. Virtually all fires involving lithium batteries can be controlled by flooding with water. However, the contents of the battery will react with water and form hydrogen gas. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended. A smothering agent will extinguish burning lithium batteries.

Emergency Responders should wear self-contained breathing apparatus. Burning lithium manganese dioxide batteries produce toxic and corrosive lithium hydroxide fumes.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

To cleanup leaking batteries:

Ventilation Requirements: Room ventilation may be required in areas where there are open or leaking batteries.
Respiratory Protection: Avoid exposure to electrolyte fumes from open or leaking batteries.
Eye Protection: Wear safety glasses with side shields if handling an open or leaking battery.
Gloves: Use neoprene or natural rubber gloves if handling an open or leaking battery.
Battery materials should be collected in a leak-proof container.

SECTION 7 - HANDLING AND STORAGE

Storage: Store in a cool, well ventilated area. Elevated temperatures can result in shortened battery life. In locations that handle large quantities of lithium batteries, such as warehouses, lithium batteries should be isolated from unnecessary combustibles.

Mechanical Containment: If potting or sealing the battery in an airtight or watertight container is required, consult your Energizer Battery Manufacturing, Inc. representative for precautionary suggestions. Do not obstruct safety release vents on batteries. Encapsulation of batteries will not allow cell venting and can cause high pressure rupture.

Handling: Accidental short circuit for a few seconds will not seriously affect the battery. Prolonged short circuit will cause the battery to lose energy, generate significant heat and can cause the safety release vent to open. Sources of short circuits include jumbled batteries in bulk containers, metal jewelry, metal covered tables or metal belts used for assembly of batteries into devices. Damaging a lithium battery may result in an internal short circuit.

The contents of an open battery, including a vented battery, when exposed to water, may result in a fire and/or explosion. Crushed or damaged batteries may result in a fire.

If soldering or welding to the battery is required, consult your Energizer representative for proper precautions to prevent seal damage or short circuit.

Charging: This battery is manufactured in a charged state. It is not designed for recharging. Recharging can cause battery leakage or, in some cases, high pressure rupture. Inadvertent charging can occur if a battery is installed backwards.

Labeling: If the Energizer label or package warnings are not visible, it is important to provide a package and/or device label stating:

> WARNING: Battery can explode or leak and cause burns if installed backwards, disassembled, charged, or exposed to water, fire or high temperature.

Where accidental ingestion of small batteries is possible, the label should include:

> WARNING: (1) Keep away from small children. If swallowed, promptly see doctor; have doctor phone (202) 625-3333 collect. (2) Battery can explode or leak and cause burns if installed backwards, disassembled, charged, or exposed to water, fire or high temperature.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation Requirements: Not necessary under normal conditions.

Respiratory Protection: Not necessary under normal conditions.

Eye Protection: Not necessary under normal conditions.

Gloves: Not necessary under normal conditions.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point @ 760 mm Hg (°C)	Not applicable for an Article
Vapor Pressure (mm Hg @ 25°C)	Not applicable for an Article
Vapor Density (Air = 1)	Not applicable for an Article
Density (g/cm^3)	2.0 – 3.0
Percent Volatile by Volume (%)	Not applicable for an Article
Evaporation Rate (Butyl Acetate = 1)	Not applicable for an Article
Physical State	Solid
Solubility in Water (% by weight)	Not applicable for an Article
pH	Not applicable for an Article
Appearance and Odor	Solid object / no odor

SECTION 10 – STABILITY AND REACTIVITY

Lithium manganese dioxide batteries do not meet any of the criteria established in 40 CFR 261.2 for reactivity.

SECTION 11 – TOXICOLOGICAL INFORMATION

Lithium manganese dioxide batteries are not hazardous waste. Under normal conditions of use, lithium manganese dioxide batteries are non-toxic.

SECTION 12 – ECOLOGICAL INFORMATION

Issues such as ecotoxicity, persistence and bioaccumulation are not applicable for articles.

SECTION 13 – DISPOSAL CONSIDERATIONS

Dispose of in accordance with all applicable federal, state and local regulations.

SECTION 14 – TRANSPORT INFORMATION

In general, all batteries in all forms of transportation (ground, air, or ocean) must be packaged in a safe and responsible manner. Regulatory concerns from all agencies for safe packaging require that batteries be packaged in a manner that prevents short circuits and be contained in "strong outer packaging" that prevents spillage of contents. All original packaging for Energizer lithium batteries are compliant with these regulatory concerns.

Energizer lithium manganese dioxide batteries are exempt from the classification as dangerous goods as they meet the requirements of the special provisions listed below. (Essentially, they are properly packaged and labeled, contain less than 1 gram of lithium and pass the tests defined in UN model regulation section 38.3).

Regulatory Body	Special Provisions
ADR	188, 230, 310, 636
IMDG	188, 230, 310, 957
UN	UN 3090, UN 3091
US DOT	29, A54, A55, 101, 102, A100
IATA, ICAO	Packaging Instructions 968 - 970

SECTION 15 - REGULATORY INFORMATION

Outside of the transportation requirements noted in Section 14, lithium manganese dioxide batteries marketed by Energizer Battery Manufacturing, Inc. are not regulated.

SARA/TITLE III - As an article, this battery and its contents are not subject to the requirements of the Emergency Planning and Community Right-To-Know Act.

SECTION 16 - OTHER INFORMATION

None.

Material Safety Data Sheet

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: DURACELL LITHIUM MANGANESE DIOXIDE COIN CELLS
Product Identification: Lithium Manganese Dioxide Coin Cells –
Duracell Designations: DL1025, DL1616; DL1620; DL2016; DL2025; DL2032; DL2430; DL2450

Product Use: Energy Source
MSDS Date of Preparation: April 24, 2009

Company Identification

US Office
Duracell, a division of P&G
Berkshire Corporate Park
14 Research Drive
Bethel, CT USA 06401
(203) 796-4000

Canadian Office
Duracell, a division of P&G
4711Yonge Street
Toronto, Ontario
Canada M2N 6K8
(416) 730-4711

Emergency Phone Number: CHEMTREC Emergency Response Hotline 1-800-9300 (US & Canada)

SECTION 2: HAZARDS IDENTIFICATION

Physical Appearance: Coin cells.

EMERGENCY OVERVIEW

CAUTION: Battery can explode or leak if heated, disassembled, shorted, recharged, exposed to fire or high temperature or inserted incorrectly. Keep in original package until ready to use. Do not carry batteries loose in your pocket or purse. Keep batteries away from children. If swallowed, consult a physician at once. For information on treatment, call the NATIONAL BUTTON BATTERY INGESTION HOTLINE, collect day or night, at (202) 625-3333. Under certain misuse conditions and by abusively opening the battery, exposed lithium can react with water or moisture in the air causing potential thermal burns or fire.

Potential Health Effects:

The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused.

Eye Contact: Contact with battery contents may cause irritation.

Skin Contact: Contact with battery contents may cause irritation.

Inhalation: Inhalation of vapors or fumes released due to heat or a large number of leaking batteries may cause respiratory and eye irritation.

Ingestion: Seek immediate medical advice. Batteries lodged in the esophagus should be removed immediately since leakage, caustic burns and perforation can occur as soon as two hours after ingestion. Irritation to the internal/external mouth areas, may occur following exposure to a leaking battery.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Amount
Manganese Dioxide	1313-13-9	65-75%
Propylene Carbonate	108-32-7	10-15%
Lithium	7439-93-2	5-10%
Graphite, synthetic	7440-44-0	5-10%
1,2-Dimethoxyethane	110-71-4	1-10%
Lithium Perchlorate	7791-03-9	<1.5%

SECTION 4: FIRST AID MEASURES

Eye Contact: If battery is leaking and material contacts the eye, flush thoroughly with copious amounts of running water for 30 minutes. Seek immediate medical attention.

Skin Contact: If battery is leaking and material contacts the skin, remove any contaminated clothing and flush exposed skin with copious amounts of running water for at least 15 minutes. If irritation, injury or pain persists, seek medical attention.

Inhaled: If battery is leaking, contents may be irritating to respiratory passages. Move to fresh air. If irritation persists, seek medical attention.

Swallowed: If battery is swallowed seek immediate medical advice. Batteries lodged in the esophagus should be removed immediately since leakage, caustic burns and perforation can occur as soon as two hours after ingestion. If mouth area irritation or burning has occurred, rinse the mouth and surrounding area with tepid water for at least 15 minutes. Do not give ipecac.

Note to Physician: Published reports recommend removal from the esophagus be done endoscopically (under direct visualization). Batteries beyond the esophagus need not be retrieved unless there are signs of injury to the GI tract or a large diameter battery fails to pass the pylorus. If asymptomatic, follow-up x-rays are necessary only to confirm the passage of larger batteries. Confirmation by stool inspection is preferable under most circumstances. For information on treatment, telephone (202) 625-3333, collect day or night. Potential leakage of less than 50 milligrams of dimethoxyethane and propylene carbonate. Dimethoxyethane rapidly evaporates. Do not give ipecac.

SECTION 5: FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Batteries may burst and release hazardous decomposition products when exposed to a fire situation.

Extinguishing Media: Use dry chemical, alcohol foam, water or carbon dioxide as appropriate for the surrounding fire. For incipient fires, carbon dioxide extinguishers are more effective than water.

Special Fire Fighting Procedures: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Fight fire from a distance or protected area. Cool fire exposed batteries to prevent rupture. Use caution when handling fire-exposed containers (batteries may explode in heat of fire).

Hazardous Combustion Products: Thermal degradation may produce hazardous fumes of lithium and manganese; oxides of carbon and other toxic by-products.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Notify safety personnel of large spills. Irritating vapors and flammable may be released from leaking or ruptured batteries. Eliminate all ignition sources. Evacuate the area and allow the vapors to dissipate. Clean-up personnel should wear appropriate protective clothing to avoid eye and skin contact and inhalation of vapors or fumes. Increase ventilation. Carefully collect batteries and place in an appropriate container for disposal. Remove spilled liquid with absorbent and contain for disposal.

SECTION 7: HANDLING AND STORAGE

Avoid mechanical or electrical abuse. DO NOT short circuit or install incorrectly. Batteries may explode, pyrolize or vent if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in accordance with equipment instructions. Replace all batteries in equipment at the same time. Do not carry batteries loose in a pocket or bag.

Storage: Store batteries in a dry place at normal room temperature.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

The following occupational exposure limits are provided for informational purposes. No exposure to the battery components should occur during normal consumer use.

Chemical Name	Exposure Limits
Manganese Dioxide	5 mg/m3 Ceiling OSHA PEL 0.2 mg/m3 TWA ACGIH TLV
Propylene Carbonate	2 mg/m3 Ceiling ACGIH TLV
Lithium	None established
Graphite (synthetic non-fibrous))	5 mg/m3 TWA (respirable dust), 15 mg/m3 TWA (total dust) OSHA PEL 2 mg/m3 TWA (respirable dust) ACGIH TLV
1,2-Dimethoxyethane	None established.
Lithium Perchlorate	None established

Ventilation: No special ventilation is needed for normal use.

Respiratory Protection: None required for normal use.

Skin Protection: None required for normal use. Use butyl rubber gloves when handling leaking batteries.

Eye Protection: None required for normal use. Wear safety goggles when handling leaking batteries.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Coin cells.
Specific Gravity: Not applicable
Water Solubility: Insoluble
Vapor Pressure: Not applicable
Boiling Point: Not applicable
Melting Point: Not applicable
Flash Point: 29°F (-2°C) (1,2-Dimethoxyethane)

Vapor Density: Not applicable **Autoignition Point:** Not applicable

SECTION 10: STABILITY AND REACTIVITY

Stability: This product is stable.

Incompatibility/Conditions to Avoid: Contents are incompatible with strong oxidizing agents. Do not heat, crush, disassemble, short circuit or recharge.

Hazardous Decomposition Products: Thermal decomposition may produce hazardous fumes of lithium and manganese; oxides of carbon and other toxic by-products.

Hazardous Polymerization: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity Data:
Manganese Dioxide: LD50 oral rat >3478 mg/kg
Propylene Carbonate: LD50 oral rat 29100 uL/kg; LD50 dermal rabbit >20 mL/kg; LC50 inhalation rat >5 g/m3
1,2-Dimethoxyethane: LDLo oral rat 1000 mg/kg, LCLo inhalation rat 63 g/m3/6 hr

Chronic Effects: The chemicals in this product are contained in a sealed can and exposure does not occur during normal handling and use. No chronic effects would be expected from handling a leaking battery.

Target Organs: Skin, eyes and respiratory system.

Carcinogenicity: None of the components of this product are listed as carcinogens by ACGIH, IARC, NTP or OSHA

SECTION 12: ECOLOGICAL INFORMATION

No ecotoxicity data is available. This product is not expected to present an environmental hazard.

SECTION 13: DISPOSAL INFORMATION

Disposal should be in accordance with Federal, state/provincial and local regulations. Large quantities of open batteries should be treated as hazardous waste. Do not incinerate except for disposal in a controlled environment.

Some communities offer recycling or collection of batteries – contact your local government for disposal practices in your area.

In California, packages that contain lithium manganese dioxide coin cells and the owner/operating instructions of products that contain lithium manganese dioxide coin cells must include the following statement: **"Perchlorate Material – Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate."**

SECTION 14: TRANSPORT INFORMATION

The transportation of lithium batteries is regulated as UN3090 by ICAO, IATA, IMO and US DOT. However, DURACELL lithium manganese dioxide batteries cells and batteries are not subject to the other provisions of the regulations as long as they are packaged and marked in accordance with the regulations. (The lithium content of cells contained in this document is less than 1 gram.)

DURACELL certifies that all of its lithium batteries meet the requirements of the UN Manual of Tests and Criteria, Part III subsection 38.3. If you assemble these batteries into larger battery packs, it is recommended that you perform the UN Tests to ensure the requirements are met prior to shipment. Cells and batteries are to be separated so as to prevent short circuits and packed in strong packaging, except when installed in equipment. Except when installed in equipment, each package containing more than 24 cells or 12 batteries must be marked indicating that it contains lithium batteries and that special procedures should be following in the event that the packaging is damaged. In addition, each shipment must be accompanied by appropriate documentation and the package must be capable of withstanding the drop test requirements.

Shipping packages containing non-rechargeable lithium batteries must be labeled, regardless of size or number of batteries, with the following statement: "PRIMARY LITHIUM BATTERIES – FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT." The labeling requirement covers shipments via highway, rail, vessel or cargo-only aircraft and covers all shipments inside, into or out of the US. The label must be in contrasting color and the letters must be 12 mm (0.5 in) in height for packages weighing more than 30 kg (66 lbs) and 6 mm (0.24 in) in height for packages less than 30 kg (66 lbs).

Except for personal use, the shipment of lithium batteries aboard passenger aircraft is no longer allowed. Airline passengers may continue to have non-rechargeable lithium batteries for their equipment and a reasonable amount of spare non-rechargeable lithium batteries for their equipment in their carry-on luggage – not in their checked baggage. For more information, air travelers should consult the US Department of Transportation (DOT) Safety Travel web site at http://safetravel.dot.gov

Effective January 1, 2009, new ICAO regulations for air cargo shipments require a reduced package size quantity and the use of two new labels. The maximum quantity a single master carton must not exceed 2.5 Kg. The new caution label requires the proper UN for the batteries being shipped and a telephone number for information. In the case of primary lithium metal batteries, the UN number is UN3090. The package must also bear a new 'cargo aircraft only' label.

At this time, IMO and ADR continue to follow Special Provision 188 from the UN Model Regulations.

SECTION 15: REGULATORY INFORMATION

United States

OSHA Status: While the finished product(s) is considered an article and not covered by the OSHA Hazard Communication Standard, 29 CFR 1910.1200, this MSDS contains valuable information critical to the safe handling and proper use of the product".

EPA TSCA Status: All intentionally-added components of this product are listed on the US TSCA Inventory.

SARA 313/302/304/311/312 chemicals: Manganese compounds 65-75%

California: This product has been evaluated and does not require warning labeling under California Proposition 65.

State Right-to-Know and CERCLA:
The following ingredients present in the finished product are listed on state right-to-know lists or state worker exposure lists

Ingredient	CAS #	Level	CERCLA RQ	State IL	MA	NJ	PA	RI
Manganese Dioxide	1313-13-9	65-75%	None	Y	Y	N	Y	Y
Propylene Carbonate	108-32-7	10-15%	None	Y	Y	Y	Y	Y
Lithium	7439-93-2	5-10%	None	Y	Y	Y	Y	Y
Graphite	7782-42-5 7440-44-0	5-10%	None	Y	Y	N	Y	Y
1,2-Dimethoxyethane	110-71-4	1-10%	None	Y	Y	Y	Y	N
Lithium Perchlorate	7791-03-9	<1.5%	None	N	N	N	N	N

Canada All intentionally-added components of this product are listed on the Canadian DSL. This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and this MSDS contains all information required by the Controlled Products Regulations.

SECTION 16: OTHER INFORMATION

P&G Hazard Rating: Health: 0 Fire: 0 Reactivity: 0

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This information is offered in good faith. Each user of this material needs to evaluate the conditions of use and design the appropriate protective mechanisms to prevent employee exposures, property damage or release to the environment. Procter & Gamble assumed no responsibility for injury to the recipient or third persons, or for any damage to any property resulting from misuse of the product.

Safety Data Sheet

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name: DURACELL PROCELL PROFESSIONAL ALKALINE BATTERIES
Product Identification: Procell Alkaline Manganese Dioxide Batteries –

Product Use: Energy Source
SDS Date of Preparation: July 1, 2008
Duracell Designations: PC1300; PC1400; PC1500; PC2400; PC903; PC908; PC915: PC926; PC1604; PC9100; PC7K67

Company Identification:

EU Office
Procter & Gamble UK.
The Heights, Brooklands
Weybridge, Surrey
KT13 0XP UK
Telephone: +44-1-93-289-6000

Switzerland Office
Procter& Gamble
Switzerland SARL
Route de Saint-Georges 47
1213 Petit-Lancy, 1, Geneva,
Telephone: +41-58-004-6111

US Office
Duracell, a division of P&G
Berkshire Corporate Park
Bethel, CT 06801 USA
Telephone: 203-796-4000

Emergency Phone Number: INFOTRAC 24-Hour Emergency Response Hotline: 1-352-323-3500 (United States of America)

SECTION 2: HAZARDS IDENTIFICATION

Physical Appearance: Batteries, labeled PROCELL®

CAUTION: May explode or leak, and cause burn injury, if recharged, disposed of in fire, mixed with a different battery type, inserted backwards or disassembled. Replace all used batteries at the same time. Do not carry batteries loose in your pocket or purse. Do not remove the battery label.

EU Classification of Preparation: Not classified as a dangerous preparation.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	EINECS Number	Amount	Classification
Manganese Dioxide	1313-13-9	215-202-6	35-40 %	Xn, R20/22
Zinc	7440-66-6	231-175-3	10-25 %	N, R50/53
Potassium Hydroxide (35 %)	1310-58-3	215-181-3	5-10 %	C, Xn, R22, R35
Graphite (natural or synthetic)	7782-42-5, 7440-44-0	231-955-3 231-153-3	1-5 %	None

SECTION 4: FIRST AID MEASURES

General Advice: The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused. Damaged battery will release concentrated potassium hydroxide, which is caustic. Anticipated potential leakage of potassium hydroxide is 2 to 20 ml, depending on battery size. A similar amount of zinc may also leak.

Eye Contact: If battery is leaking and material contacts the eye, flush thoroughly with copious amounts of running water for 30 minutes. Seek immediate medical advice.

Skin Contact: If battery is leaking and material contacts the skin, remove any contaminated clothing and flush exposed skin with copious amounts of running water for at least 15 minutes. If irritation, injury or pain persists, seek medical advice.

Inhaled: If battery is leaking, contents may be irritating to respiratory passages. Move to fresh air. If irritation persists, seek medical advice.

Swallowed: If battery contents are swallowed, do not induce vomiting. If the victim is alert, have them rinse their mouth are the surrounding skin with water for at least 15 minutes. Seek immediate medical attention.

Note: This SDS does not include or address the small button cell batteries which can be ingested.

24-HOUR NATIONAL BUTTON BATTERY INGESTION HOTLINE
(202) 625-3333 – collect to the United States

SECTION 5: FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Batteries may burst and release hazardous decomposition products when exposed to a fire situation.

Extinguishing Media: Use any extinguishing media that is appropriate for the surrounding fire.

Special Fire Fighting Procedures: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Fight fire from a distance or protected area. Cool fire exposed batteries to prevent rupture. Use caution when handling fire-exposed containers (containers may rocket or explode in heat of fire).

Hazardous Combustion Products: Thermal degradation may produce hazardous fumes of zinc and manganese; hydrogen gas, caustic vapors of potassium hydroxide and other toxic by-products.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Notify safety personnel of large spills. Caustic potassium hydroxide may be released from leaking or ruptured batteries. Clean-up personnel should wear appropriate protective clothing to avoid eye and skin contact and inhalation of vapors or fumes. Increase ventilation. Carefully collect batteries and place in an appropriate container for disposal.

SECTION 7: HANDLING AND STORAGE

Avoid mechanical or electrical abuse. DO NOT short circuit or install incorrectly. Batteries may explode, pyrolize or vent if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in accordance with equipment instructions. Do not mix battery systems, such as alkaline and zinc carbon, in the same equipment. Replace all batteries in equipment at the same time. Do not carry batteries loose in a pocket or bag. Do not remove the battery label.

Storage: Store batteries in a dry place at normal room temperature. Do not refrigerate – this will not make them last longer.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

The following occupational exposure limits are provided for informational purposes. No exposure to the battery components should occur during normal consumer use. **Refer to specific country regulations for additional exposure limit information.**

Chemical Name	Exposure Limits
Manganese Dioxide	0,5 mg/m3 TWA UK WEL 0,5 mg/m3 TWA (inhalable) DFG MAK 0,2 mg/m3 VL Belgium 0,2 mg/m3 TWA Denmark LV
Zinc	None established for zinc metal
Potassium Hydroxide	2 mg/m^3 STEL UK WEL 2 mg/m^3 VCD Belgium 2 mg/m^3 Ceiling Denmark LV
Graphite	4 mg/m^3 TWA UK WEL (respirable dust) 10 mg/m^3 TWA UK WEL (inhalable dust) 1,5 mg/m^3 TWA DFG MAK (respirable dust) 4 mg/m^3 TWA DFG MAK (inhalable dust) 2 mg/m^3 VL Belgium (respirable dust)

Ventilation: No special ventilation is needed for normal use.

Respiratory Protection: None required for normal use.

Skin Protection: None required for normal use. Use neoprene, rubber or latex gloves when handling leaking batteries.

Eye Protection: None required for normal use. Wear safety goggles when handling leaking batteries.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Cylindrical battery.
Water Solubility: Insoluble

SECTION 10: STABILITY AND REACTIVITY

Stability: This product is stable.

Incompatibility/Conditions to Avoid: Contents are incompatible with strong oxidizing agents. Do not heat, crush, disassemble, short circuit or recharge.

Hazardous Decomposition Products: Thermal decomposition may produce hazardous fumes of zinc and manganese; caustic vapors of potassium hydroxide and other toxic by-products.

Hazardous Polymerization: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

Potential Health Effects:

The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused. Damaged battery will release concentrated potassium hydroxide, which is caustic. Anticipated potential leakage of potassium hydroxide is 2 to 20 ml, depending on battery size. A similar amount of zinc may also leak.

Eye Contact: Contact with battery contents may cause severe irritation and burns. Eye damage is possible.

Skin Contact: Contact with battery contents may cause severe irritation and burns.

Inhalation: Inhalation of vapors or fumes released due to heat or a large number of leaking batteries may cause respiratory and eye irritation.

Ingestion: Swallowing is not anticipated due to battery size. Choking may occur if smaller AAA batteries are swallowed. Ingestion of battery contents (from a leaking battery) may cause mouth, throat and intestinal burns and damage.

Acute Toxicity Data:
Manganese Dioxide: LD50 oral rat >3478 mg/kg
Potassium Hydroxide: LD50 oral rat 273 mg/kg

Chronic Effects: The chemicals in this product are contained in a sealed can and exposure does not occur during normal handling and use. No chronic effects would be expected from handling a leaking battery.

Target Organs: Skin, eyes and respiratory system.

Carcinogenicity: None of the components of this product are listed as carcinogens by the EU Directive on the classification and labeling of substances.

SECTION 12: ECOLOGICAL INFORMATION

No ecotoxicity data is available. This product is not expected to present an environmental hazard.

SECTION 13: DISPOSAL INFORMATION

Disposal should be in accordance with national and local regulations. Do not incinerate for disposal except in a controlled incinerator.

Duracell Procell alkaline batteries are labeled in compliance with the EU Battery Directive 2006/66.

SECTION 14: TRANSPORT INFORMATION

Transportation Information – Products covered by this SDS, in their original form, are considered "dry cell" batteries and are not regulated as "DANGEROUS GOODS" for transportation.

For finished packaged product transported by ground (ADR/RID): – not regulated
For finished packaged product transported by sea (IMDG) – not regulated
For finished packaged product transported by air (IATA): – not regulated

SECTION 15: REGULATORY INFORMATION

EU Classification of Preparation: Not classified as a dangerous preparation.

REACH: These products are manufactured articles and not subject to REACH registration requirements.

EU Labeling: None Required
Labeling is not required because batteries are classified as articles under the both REACH and the Dangerous Preparations Directive and as such are exempt from the requirement for labeling.

SECTION 16: OTHER INFORMATION

P&G Hazard Rating: Health: 0 Fire: 0 Reactivity: 0

EU Classes and Risk Phrases for Reference (See Sections 2 and 3)
C Corrosive
N Dangerous for the Environment
Xn Harmful
R20/22 : Harmful by inhalation and if swallowed.
R22 Harmful if swallowed.
R35 Causes severe burns
R50/53 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
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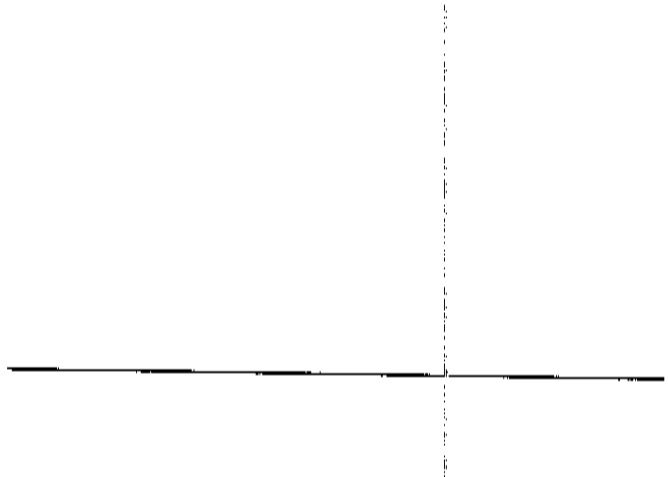
TESTEX TAPE ADHESIVE MSDS



Material Safety Data Sheet

AVERY DENNISON

Section 1. Product and Company Identification

Spec Code: R-130
Product Name: Wet, Uncoated R-130 Solvent Adhesive
Product Use: Pressure Sensitive Adhesive
Manufacturer: Avery Dennison
Fasson Roll North America
8080 Norton Parkway
Mentor, OH 44060
Phone: 440/534-6000
Fax #: 440/534-6663
CONFIDENTIAL For Internal Use Only
Emergency Number: 800/535-5053 InfoTrac

HMIS Ratings:

Health	1
Flammability	1
Reactivity	0

Information Contacts:

For technical information contact your technical sales representative. For additional health/safety/regulatory information please contact:
Fasson's Environmental Health & Safety Department at 440/534-6518.

Section 2. Composition/Information on Components

Name	CAS Number	OSHA Hazard (Yes/ No)	Percent (by wt.)	Exposure Limits	
				OSHA TWA/STEL	ACGIH TWA/STEL
Polymer	Mixture	No	10-20	Not established	Not established
Toluene	108-88-3	Yes	30-40	100/150 ppm	50/150 ppm
Heptane Reagent	142-82-5	Yes	30-40	400/500 ppm	400/500 ppm
Other	Mixture	No	10-20	Not established	Not established

Section 3. Hazardous Identification

Potential Health Effects, Signs and Symptoms

Primary Routes of Entry: Eye, Skin, Ingestion, Inhalation

Eye Contact: Minimal to mild irritation. May cause slight irritation, tearing, redness or stinging.

Skin contact: Minimal to mild irritation. Contact may cause redness and discomfort. Burns are possible if contact occurs with hot adhesive

Inhalation: Breathing small amounts of this material during normal handling is not likely to cause harmful effects.

Ingestion: Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful

Chronic Effects: Overexposure to this material may cause adverse effects on the following target organs: liver, kidneys, and nervous system.

Section 4. First Aid Measures

Material Safety Data Sheet

AVERY DENNISON

Eyes: Flush eyes continuously with water for 15 minutes. Seek medical attention.

Skin: Remove contaminated clothing and shoes. Wash affected area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse.

Inhalation: Immediately move individuals to fresh air. Seek medical attention.

Ingestion: If swallowed, seek medical attention. Never give anything by mouth to a drowsy or unconscious person.

Note to Physician: Inhalation of high concentrations of this material, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmia.

Section 5. Fire Fighting Measures

Flash Point: Not determined/Flammable **LEL:** Not determined **UEL:** Not determined

Extinguishing Media: Use alcohol foam, carbon dioxide, water or dry chemical when fighting fires involving this material. Water may be used to keep fire-exposed containers cool until fire is out.

Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus and full protective gear. Water from fog nozzles may be used to keep fire-exposed containers cool until fire is out.

Unusual Hazards: Vapors are heavier than air and may travel along the ground or may be moved by ventilation and ignited by ignition sources at locations distant from the material handling point.

Section 6. Accidental Release Measures

Eliminate all sources of ignition. Avoid prolonged contact with skin and breathing of vapor. Remove with inert absorbent. May cause slippery floors. Prevent run-off to sewers, streams or other bodies of water. Ventilate area. Dispose of in accordance with Local, State and Federal regulations.

Section 7. Handling and Storage

Handling: Do not get in eyes, on skin, or on clothing. Avoid breathing vapor. Store in well-ventilated area. Keep away from heat, sparks and flame.

Storage: Store in cool, dry area. Recommended storage temperature 60 – 90°F. Keep from freezing.

Section 8. Exposure Control/Personal Protection

Engineering Controls: Provide mechanical ventilation to keep below the exposure limits.

Personal Protective Equipment:

Eye/Face Protection: Chemical goggles or other safety eye wear providing splash protection.

Skin Protection: Impervious, chemical resistant gloves.

Respiratory Protection: If exposure limits are exceeded, wear NIOSH/MSHA approved air supplied respirator.

Other: Wear long-sleeved coveralls. Launder before reuse.

Section 9. Physical and Chemical Properties

Material Safety Data Sheet

AVERY DENNISON

Appearance:	White liquid.
Odor:	Slight solvent like odor.
% Solids:	23
Density:	6.51 lbs/gal
Viscosity:	10,000 cps
Solubility in water:	Dispersible

Section 10. Stability and Reactivity

Chemical Stability:	Stable
Conditions to Avoid:	None known.
Hazardous Decomposition Products:	May form carbon dioxide and carbon monoxide
Hazardous Polymerization:	Not known to occur

Section 11. Toxicological Information

No toxicological studies have been conducted on this product.

Section 12. Ecological Information

No ecological studies have been conducted on this product.

Section 13. Disposal Considerations

Dispose of in accordance with local, state, and federal laws and regulations.

Section 14. Transport Information

Flammable liquid. Consult DOT regulations before shipping material.

Section 15. Regulatory Information

U.S. Federal Regulations:

SARA 302:	N/A
SARA 304:	N/A
SARA 311-312:	Acute and Chronic
SARA 313:	N/A
TSCA 8(b):	All of the components in this product are listed on the TSCA 8(b) inventory.
TSCA 12(b):	This product does not contain any export-regulated chemicals.

International Regulations: Not applicable.

State Regulations: N/A

Section 16. Other Information

Material Safety Data Sheet

AVERY DENNISON

Created: October 22, 2002
Revised:

Disclaimer:

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind expressed or implied is made with respect to the information contained herein. This document is furnished for product information.

Print this Page

Fasson® Pli-A-Print®/R130/40#SCK

Spec# 08032

Facestock:

Fasson® Pli-A-Print® is a latex impregnated, clay coated paper. High internal strength and moisture resistance. Good conformability and flexibility. Fair printability with solvent/water-based flexo, screen, and offset. Not recommended with UV ink systems, letterpress printing, or imprinting.

Basis Weight:	59# per ream ± 10% (500 sheets 25" x 38")
Caliper:	0.0032 inches ± 10%
Tensile:	MD 20# per inch width CD 15# per inch width
Tear:	MD 48 grams per sheet CD 50 grams per sheet
Stiffness:	MD 50 mg CD 25 mg

Adhesive:

Fasson® R130 is a removable adhesive featuring moderately high tack and ultimate bond strength. This adhesive performs well on curved surfaces and features clean removability from most substrates. Meets the requirements of FDA 21 CFR 175.105 for indirect food contact. This sections covers applications where incidental contact between food and adhesive could occur.

Type:	Solvent Rubber
Minimum Application Temperature:	+40° F
Service Temperature Range:	0° F to +120° F

Typical Performance Data: Tested with 60# C1S Paper at room temperature on standard lab panels.

Stainless Steel	
Loop Tack:	0.8 lbs
Peel Adhesion:	0.4-0.7 lbs
Treated HDPE	
Loop Tack:	0.6 lbs
Peel Adhesion:	0.4-0.6 lbs
Treated LDPE	
Loop Tack:	0.5 lbs
Peel Adhesion:	0.3-0.6 lbs
Polypropylene	
Loop Tack:	1.2 lbs
Peel Adhesion:	0.5-0.8 lbs
Glass	
Loop Tack:	0.7 lbs
Peel Adhesion:	0.4-0.6 lbs

Liner:
40#SCK is a bleached super-calendered kraft stock featuring high internal strength, toughness, and tear resistance. Used primarily for roll-to-roll label applications.

Basis Weight:	42.40# per ream, ± 10% (500 sheets 24" x 36")
Caliper:	0.00244 inches ± 10%
Tensile:	MD 39.70# per inch width CD 14.70# per inch width
Tear:	MD 34.70 grams CD 41.80 grams

Total Construction Caliper (approximate): 0.00644 inches ± 10%

Applications and Uses
This product can be used in a wide variety of labeling applications where flexibility, moisture resistance, and adhesive performance are critical. Fasson® R130 is ideal for applications requiring clean removability for varying lengths of time. In addition to its high initial tack, Fasson® R130 maintains a fairly level degree of adhesion, enhancing clean removability. Tape reel labeling, with its stringent requirements for clean removability, is an ideal use for this adhesive. This adhesive can also be used for product identification labels requiring the substrate to be retained after the contents are used.

Shelf Life
Unless specified otherwise in this document, one year when stored at 72°F at 50% RH

Statement of Practical Use
As with all pressure sensitive materials, this product should be tested thoroughly under end-use conditions to ensure it meets the requirements of the specific application.