Partnerships – Eco- friendly condom packing

UNFPA - WHO - UNICEF Joint meeting

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Partnerships – Eco-friendly condom packing

- Introduction
- Components of condom packing and current state of art
- Opportunities for improvement
- Evaluation
- Partnership opportunities

Partnerships – Eco-friendly condom packaging

Introduction

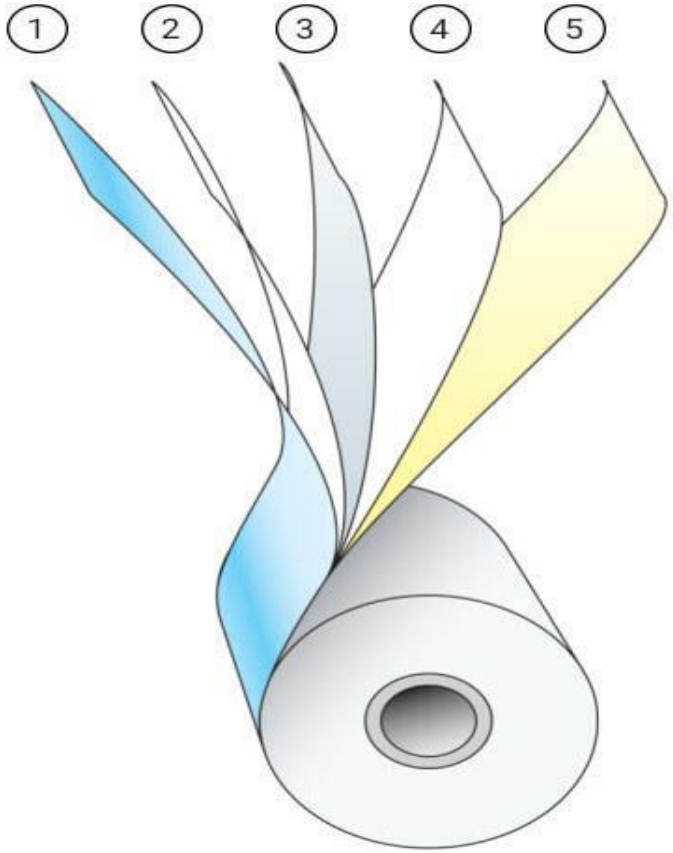
- For manufacture of billion condoms:
- Quantity of natural rubber involved is estimated about be 1,700 Tonnes
- Quantity of chemicals including lubricants is estimated to be about 550 tonnes plus process chemicals
- Quantity of packaging materials involved 4,300 tonnes

Partnerships – Eco-friendly condom packing

Component	Source	Reusability	Recyclability	Biodegradability	Remarks
Condom	Rubber - natural	No	Limited	Yes, but Long time	Focus area
Chemicals	Synthetic	No	No	Partly	Focus area
Packing materials – Aluminium	Natural	Difficult to reclaim	Difficult to reclaim	??	Focus area,
Packing materials – Plastics	Synthetic – derived from HC	Difficult to reclaim	Difficult to reclaim	??	Focus area
Packing materials – paper and board	Natural	Limited	Yes	Yes	Focus area
Other transport materials	Natural	Yes	Yes	Yes	Focus area

Partnerships – Eco-friendly condom packaging - current state of art

Primary packing



Partnerships – Eco-friendly condom packaging - current state of art

Primary packing

1. Exterior Layer

- Provides dimensionally-stable print surface
- Protects the ink
- Protects the barrier layer
- Plays a role in burst strength & tear resistance
- Adds to overall pouch strength

2. Tie Layer

- Provides another layer of protection for the barrier layer
- Bonds the outside layer to the barrier layer
- Hides the colour of the barrier layer

Partnerships – Eco-friendly condom packaging - current state of art

Primary packing

3. Barrier layer

- Provides chemical resistance
- Prevents moisture, light, and oxygen transmission

4. Tie Layer

- Bonds the barrier layer to the sealant layer film
- Provides protection for the barrier layer

5. Sealant Layer

- Allows the flexible packaging structure to be heat-sealable
- Provides burst strength
- Seals the product within
- Protects the barrier layer

Partnerships – Eco-friendly condom packing
Packaging Components involved – status of art

Primary packing – foil laminate

Component	Purpose	Characteristics	Merits	Limitations	Potential for reduction/ replacement
Packing materials – Aluminium	Barrier properties, light resistance	8 micron thick	Low WVTR, Low OTR	High energy involved in production, brittle, flex crack	Reduction in thickness, composites, replacement
Packing materials – Plastics	Conferring flexibility and structure, sealant layer, printing text matter, enhancing barrier properties	PE, LLDPE, Ionomers, PET, modified PE, BOPP	Printability, seal ability and seal strength, flexible characteristics	Limited OTR and WVTR, Biodegradability - ???	Replacement, Reduction, modifications

Partnerships – Eco-friendly condom packaging - Opportunities for improvement

1. **Material of construction**:

a) **Exterior layer:**

Avoid PE, move to PET, Glossy Paper, cellophane, METPET, METBOPP, Cutin – Aleuritic acid –cellulose complexes

b) Tie layers:

Recycled/recyclable PE blends, PLA films, PHB films, Polyamides films, Adhesive tie layer between exterior and barrier layers

c) Barrier layer:

Need for aluminium? – Stability, formulation, shelf life
Thickness – impact of pinholes
Metallised Exterior layer, coated PTFE layers

Partnerships – Eco-friendly condom packaging - Opportunities for improvement

1. **Material of construction**:

d) : Sealant layer:

Adhesives, heat sensitive and pressure sensitive, low temperature vulcanising polymers

Partnerships – Eco-friendly condom packaging - Opportunities for improvement

2. Format:

Material and area:

- **Square Vs rectangle**
- **Modified rectangle**

Partnerships – Eco-friendly condom packing
Packaging Components involved – status of art

Secondary packing – Wallets, inner boxes, catch covers

Component	Purpose	Characteristics	Merits	Limitations	Potential for reduction/ replacement
Packing materials – folding box board, paper board	Container, strength for holding during transport and distribution, labelling details	275 to 400 gsm	Strength, puncture strength, protection from mechanical damage	Type of board used, extent of recycling, weight added	Reduction in weight without compromising strength and labelling

Partnerships – Eco-friendly condom packaging - Opportunities for improvement

1. **Material of construction**:

Reduction in weight without compromising strength:

- **Reduction in grammage, fibre reinforced boards**
- **Recycled board blends**
- **Vegetable wax coating for water resistance**
- **Fibre reinforcement**

2. Format:

- **Pillow/ pouch packs**
- **Shrink wrapped trays and lids, with labels**

Partnerships – Eco-friendly condom packing
Packaging Components involved – status of art

Tertiary packing – shipper cartons

Component	Purpose	Characteristics	Merits	Limitations	Potential for reduction/ replacement
Packing materials – Recycled corrugated paper	Container, strength for holding during transport and distribution, labelling details	As per WHO UNFPA specification	Strength, puncture strength, protection from mechanical damage	Type of board used, extent of recycling, weight added	Reduction in weight without compromising strength and labelling

Partnerships – Eco-friendly condom packaging - Opportunities for improvement

1. Material of construction:

- **Fibre reinforced corrugated cartons – Lignin, cellulose**
- **Vegetable wax coating for water resistance**

2. Format:

- **Integration of pack sizes, number of units, through all the levels of packaging to achieve optimum utilization of pallets sizes and container space**
- **Size optimization to reduce processing wastages**
- **Size optimisation for less energy intense material handling**

Partnerships – Eco-friendly condom packing
Packaging Components involved – status of art

Shipping and tranport

Component	Purpose	Characteristics	Merits	Limitations	Potential for reduction/ replacement
Pallets	consolidation	Wooden as per international norms	Strength, handling ability	Secondary distribution	Sub units trays

Partnerships – Eco-friendly condom packaging - Opportunities for improvement

- **Use of recycled PE for pallet wrapping**
- **Appropriately designed secondary distribution cartons**

Partnerships – Eco-friendly condom packaging

Objective :

2030 Agenda for sustainable development

Evaluation:

EN 13432

ASTM D6400

Partnerships – Eco-friendly condom packaging

Partnership:

- **Manufacturers of packing materials**
- **Manufacturers of condoms**
- **Procurement agencies**
- **Logistics and service providers**
- **Programme implementation**
- **Agencies involved in disposal of materials**
- **Regulatory authorities**
- **Facilitating agencies**

Partnerships – Eco-friendly condom packaging

Partnership: Forums

- UNFPA – manufacturers joint meetings
- ISO TC 157 TG 4
- National manufacturers association
- Research laboratories of rubber products
- Institutes of Packaging Technology
- Global sustainability initiate agencies
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Thank you