

# Rayoface™ Rayofoil™ and Rayoweb™

## Health and Safety Guidelines for the use of Rayoface, Rayofoil and Rayoweb Biaxially Oriented Polypropylene Films (BOPP)

### INTRODUCTION

- The information shown below should be studied carefully and its contents drawn to the attention of, and made available to, all relevant personnel before the product is handled.
- Rayoface, Rayofoil and Rayoweb BOPP films do not present any specific hazards to health or safety when used for their intended purposes in accordance with reasonable industrial practice, hygiene and good housekeeping.
- The Rayoface, Rayofoil and Rayoweb range of BOPP films fall into the following categories:
  - i) Uncoated films
  - ii) Coated films

### FOOD CONTACT

- Rayoface and Rayoweb uncoated films are manufactured from polymers and additives which comply with the EU list of approved ingredients. (This applies from the date of validity of the corresponding EU regulations and their positive lists).
- Rayoface coated films and Rayofoil metallised films are not suitable for direct contact with foodstuffs.
- Before using Rayoface, Rayofoil and Rayoweb BOPP films for direct food contact applications please refer to Literature Reference L110 for details of compliance with the relevant regulations.

### INGESTION

- Rayoface, Rayofoil and Rayoweb BOPP films are non-toxic. However in the unlikely event of ingestion of polypropylene film, flake or dust particles it is recommended that medical advice is sought.

### INHALATION

- Polypropylene powder is considered to be a chemically inert low toxicity dust not normally dangerous to health, although high concentrations in the air may cause a nuisance. Airborne concentrations must be kept below the normal recommended levels for inert powders.
- The UK Health and Safety Executive and the American Conference of Government Industrial Hygienists (ACGIH) quote Occupational Exposure Limits (OEL) of 10 mg/m<sup>3</sup> (8-hour Time Weighted Average (TWA)) for total inhalable dust and 5 mg/m<sup>3</sup> (8-hour TWA) respirable dust.
- In the event of a process creating great quantities of polypropylene flake or dust particles, precautions must be taken to avoid inhalation and the use of a filter mask may be advisable. In cases where inhalation of polypropylene flake or dust particles occurs, remove the patient to fresh air and seek medical advice.

### EYE CONTACT

- Polypropylene flake or dust particles are not dangerous, but may cause eye irritation due to their mechanical action. In the event of a process creating polypropylene flake or dust particles, eye protection is advised. In cases where polypropylene flake or dust particles contact the eyes, flush with water. If eye irritation persists, seek medical advice.

### SKIN CONTACT

- Isolated cases of dermic symptoms have been associated with personnel handling plastic films, and have been attributed to a very rare form of allergy. The use of barrier creams and protective gloves can usually eliminate such problems, but in extreme cases the personnel concerned should be removed from the environment and seek medical advice. The occurrence should then be advised to our Technical Services Department.

### FIRE RISKS

- BOPP is not a flammable material but it will burn if exposed to flame, giving off harmful fumes which should not be inhaled.
- If polypropylene films are involved in a fire they will ignite and continue to burn freely provided sufficient oxygen is present and even if the source of ignition is removed.
- N.B. The minimum ignition temperature of BOPP film is 380°C.
- Molten droplets of polymer can be produced which could ignite adjacent flammable and/or combustible materials.
- Skin or clothing contaminated by molten polymer should be drenched with clean cold water until cool. In the case of the former refer the patient for immediate medical attention. Under no circumstances attempt to peel the solidified polymer off the skin.
- BOPP films generate little smoke when burning under conditions of free air supply.

The major constituents of the fumes evolved are:

- i) Uncoated films - water vapour, carbon dioxide and carbon monoxide.
  - ii) Coated films - water vapour, carbon dioxide, carbon monoxide and oxides of nitrogen.
- Carbon monoxide and certain nitrogen oxides are toxic. Care should therefore be taken not to inhale these decomposition fumes evolved during a fire involving BOPP films.
  - Fires involving BOPP films can be dealt with by any commonly available fire extinguisher, although restrictions may be imposed by the presence of other materials such as flammable solvents or electrical equipment. It is advisable in such situations to obtain advice from the local Fire Authority.
  - BOPP films should not be used for decorative purposes in areas prone to fire risk.

### EXPLOSION RISK

- Do not allow any accumulation of polypropylene powder. If a process generates polypropylene powder, extreme care must be taken not to accumulate an electrostatic charge or any other source of ignition. In such cases expert advice should be sought on this matter.

The explosion limit of polypropylene powder in air is 0.02 g/L.

### FILM STORAGE

- No special conditions are required for the storage of Rayoface, Rayofoil and Rayoweb films but it is strongly recommended that dry conditions below 30°C are employed to minimise any deterioration of the properties.
- Rayoface and Rayoweb films are supplied in protective coverings, Rayofoil films in a high barrier protective covering. The films should remain in these coverings until ready for use. Converted reels in both master and slit form should also be similarly protected at all times.

When stored as recommended, Rayoface and Rayoweb films are suitable for use up to 6 months from the date of delivery. Rayofoil metallised films are suitable for use up to 4 months from date of delivery. Stocks should be used in rotation according to date of delivery. It is also recommended that films are allowed to reach operating temperatures 24 hours before use.

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#### FILM PACKAGING

- Pallets of film should only be moved by trained operators using mechanical handling equipment designed for the weight and dimensions of the pallets in use. Racking should be used wherever possible.
- The stacking of film pallets on top of each other is not recommended. The stacking of cradles more than three high is not recommended.
- It is appreciated however, that in some instances pallets are stacked by customers. In these situations the following guidelines should be rigidly adhered to:
  - i) The integrity of the packaging and strapping on each pallet should be checked to ensure that no damage has occurred in transit. Pallets which have any damage should not be moved or stacked until any damage is repaired (eg re-strapping carried out).
  - ii) Only pallets/cradles of the same size, containing similar reels of films should be stacked.
  - iii) Pallets/cradles must be stacked squarely on top of one another.
  - iv) If reels are packed vertically, a maximum stack height of three pallets should be observed.
  - v) Never stack pallets with cradles.
  - vi) If reels are packed horizontally the recommended stack height should not exceed 3.5m (12 feet).
- Pallets should not be climbed on but properly approached and handled. Broken pallets should be handled with care and removed for repair or disposal.
- Never lift more than one pallet/cradle at a time.
- Pallets/cradles should never be pushed or pulled.
- Pallet strapping is under tension and when cut will recoil exposing sharp corners. It is recommended that eye protection and protective gloves are worn at all times during cutting and handling of strapping.
- Various materials are utilised in the packaging, overwrapping and protection of reels and pallets during transit and storage. Care should be taken in the handling and disposal of these materials, and the appropriate Health and Safety Guidelines should be observed.

#### FILM HANDLING

- BOPP films can be slippery. Film should not be allowed to litter floors or obstruct access areas where personnel may walk or stand.
- Safety shoes should be worn at all times by personnel involved in the handling and movement of all film reels. The weights of individual reels that can be manually handled are limited by legislation.
- BOPP film reels and packs of sheets should be moved only with equipment designed for the purpose.

#### CONVERTING MACHINERY

- Rayoface, Rayofoil and Rayoweb BOPP films can be converted using conventional solvents, adhesives, liquid and UV curable ink systems. Health and Safety precautions recommended by the suppliers should be strictly observed.
- It is advisable that anti-static equipment is fitted to machines, particularly in low humidity environments.
- Advice on suitable anti-static devices can be obtained from our Technical Services Department.

#### CONSUMER ADVICE

- Discarded wraps of BOPP film may, if placed over the head, cause suffocation particularly in young children.
- BOPP films are unsuitable for direct use in cooking processes (including microwave ovens).
- BOPP films are not recommended for applications involving gamma radiation sterilisation.

#### DISPOSAL

- Polypropylene films are water insoluble, ground and ground-water neutral, effectively non-toxic solids which present no environmental hazards.
- The disposal of BOPP films in supervised waste tips is clean and effective.
- Unprinted BOPP film is not classified as Special Waste under the UK Control of Pollution (Special Waste) Regulations 1980 and may be disposed of at approved landfill sites or by incineration under approved conditions in compliance with the requirements of the UK Control of Pollution Act 1974.
- The most economic method of disposal involves incineration. Well managed incineration regenerates the energy content of the plastic material producing effectively non-toxic effluent, only water and carbon dioxide.
- It is recommended that modern incinerators involving high temperatures and long residence times within the combustion chamber be employed together with flue gas scrubbing techniques to meet the requirements of the regulatory emission control standards.
- Advice on the preferred method of disposal should be obtained from your Local Authority Waste Disposal Officer.

#### CUSTOMER ENQUIRIES

- For advice or assistance with any matters relating to Health and Safety aspects of the use of Rayoface, Rayofoil and Rayoweb BOPP labelling films please contact our Technical Services Department.
- Material Safety Data Sheets are available, prepared to Directive 93/112/EC. Whilst BOPP films are not classified as hazardous, the standard layout has been used so that those familiar with Data Sheets can easily find the required information.

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