**Public**
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BU ICC
R&D Personal Care
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# *Clariant Products for WetWipes*

**April 2008**

Clariant

Exactly your chemistry.

# Contents

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# *Classification of Wet Wipe Products*

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Clariant

Exactly your chemistry.

- Personal Hygiene Wipes
- Baby Care Wipes
- Make- up Remover / Facial Cleansing Wipes (containing surfactants or oil)
- Anti-bacterial wipes (hand disinfection, anti-acne)

Clariant

Exactly your chemistry.

# *Clariant Ingredients for Wet Wipes*

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Clariant

Exactly your chemistry.

- Emulsifiers/ Solubilizers
- Mild Surfactants
- Polymers for special sensoric effects
- Emollients
- Actives
- Preservatives

# *Emulsifiers and Solubilizers*

Clariant

Exactly your chemistry.

| | | |
|---|---|---|
| Hostaphat® KL 340 D | Trilaureth-4 Phosphate | Excellent emulsifier system for stable low viscous emulsions |
| Emulsogen® HCO 040 | PEG-40 hydrogenated Castor Oil | Solubilizer |
| Emulsogen® HCW 049 | PEG-40 hydrogenated Castor Oil | Solubilizer |

# *Mild Surfactants- especially for face and baby cleansing wipes*

Clariant

Exactly your chemistry.

| | | |
|---|---|---|
| Hostapon® CT paste | Sodium Methyl Cocoyl Taurate | Surfactant with excellent oil compatibility for facecare |
| Hostapon® TPHC | Sodium Methyl Oleyl Taurate | Powdered surfactant for dry wipes |
| Hostapon® SCI | Sodium Cocoyl Isethionate | Powdered surfactant for dry wipes |
| Genagen® KB | Coco-Betaine | Good foam, preservative free |
| Genagen® CAB | Cocamidopropyl Betaine | Good foam and mildness |
| Hostapon® KCG | Sodium Cocoyl Glutamate | Excellent skin afterfeel |
| Genagen® 3SB | Coco-Betaine (and) Sodium Methyl Cocoyl Taurate (and) Sodium Cocoyl Isethionate | Balanced liquid surfactant blend for excellent foam and mildness |

# *Polymers for special sensoric effects*

Clariant

Exactly your chemistry.

| | | |
|---|---|---|
| Aristoflex® AVC | Ammonium Acryloyldimethyltaurate/VP Copolymer | Excellent skin afterfeel and low tackiness at low concentration (0.2 – 0.4 %) |
| Aristoflex® HMB | Ammonium Acryloyldimethyltaurate Beheneth-25 Methacrylate Crosspolymer | Excellent skin afterfeel and low tackiness at low concentration (0.2 – 0.4 %), especially when using high amounts of actives |
| Aristoflex® PEA | Polypropylene Terephthalate | Excellent, dry sensorics |
| Genapol® DAT | PEG- 150 Polyglyceryl-2 Tristearate (and) PEG- 6 Caprylic/ Capric Glycerides | Associative thickener & skin conditioner |
| SilCare® Silicone SEA | Trideceth-9 Amodimethicone (and) Trideceth- 12 | Watersoluble silicone for excellent skinfeel and low tackiness |
| Genamin® PQ- 43 | Polyquaternium- 43 | Polymer with excellent, silky skin afterfeel |

# Actives

Clariant

Exactly your chemistry.

| | | |
|---|---|---|
| Allantoin® | Allantoin | Skin soothing agent |
| Octopirox®® | Piroctone Olamine | Anti-fungal active, anti-acne wipes, young care; preservative component |

# *Emollients*

Clariant

Exactly your chemistry.

| | | |
|---|---|---|
| SilCare® Silicone 41M15 | Caprylyl Methicone | Excellent spreading agent, compatibilizer & detackifier |

Clariant

Exactly your chemistry.

# *Preservation of Wet Wipes*

# *Important Preservation Considerations Formulations*

Clariant
Exactly your chemistry.

- 3 Main formulation types
  - Alcohol containing formulations
  - Alcohol free aqueous formulations
  - Emulsion formulations
- Formulation properties
  - pH, viscosity, water/alcohol, single & multi phase, etc.
- Ingredients
  - compatibility with preservatives used
  - Micro susceptibility
- Challenge test liquid and then wipes

# *Important Preservation Considerations Fabrics*

Clariant
Exactly your chemistry.

- Various types on non-woven / woven Fabrics
  - Wetlaid economy fibres
  - Airlaid standard fibres
  - spunlace premium fibres
- Adhesives used may affect preservatives
- Fabric thickness, liquid retention, etc.
  - Liquid / Fabric ratios
- Preservative may become bound by fabric
- Fabric screening for contamination levels
  - Pretreatment of fabrics recommended
- Pre-Heated Moistened Fabrics - Less Chance of contamination

# *Packaging Considerations- Minimise post manufacturing and in use contamination*

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Exactly your chemistry.

- Sachets (Laminate Sheets)
  - Single use application
  - Should remain sterile until use
  - avoid high permeability (porosity, evaporation of contents)
  - ideal packaging for wipes
- Bulk Packs - Peel Types ~50 per pack
  - Limited shelf life due to evaporation after opening
  - Careful use by consumer - effective closures
  - Wipes replaced from time to time leading slight in use contamination
- Slot Feed-through
  - Manual feed by consumer from time to time
  - Not Ideal and prone to introduction of microbes

# *Important Considerations Packaging*

Clariant

Exactly your chemistry.


[Peel Bulk Pack]


[Press Zip  Bulk Pack]


[Feed-Through]

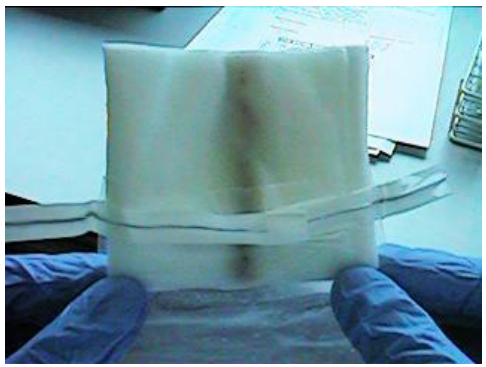

[Tub Packaging]

# *Challenge Testing Considerations*

Clariant

Exactly your chemistry.

- Standard EP Challenge Test Methodology
  - Modified for wet wipes
  - Standard organisms used
  - EP Results Criteria
  - Include In House Organisms



- Sample Size
- Position in Pack
- Inoculation / Streaking / Recovery Techniques
- Single / Multiple Testing
- Involves significant man power / time

# *Preservatives for Wet Wipes*

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Exactly your chemistry.

- Combinations commonly used
  - no single active can meet all criteria

- Actives commonly used in combinations
  - Paraben Esters
  - Formaldehyde Donors
  - Halogenated
  - Quaternary ammonium compounds
  - Solvents

# *Preservatives for Wetwipes*

Clariant

Exactly your chemistry.

- Clariant offers a wide range of single actives and tailormade blends as well as testing facilities for wetwipe challenge testing

- The preservative market for wetwipes is changing
  original systems very much based on parabens
  parabens/phenoxyethanol/bronopol, parabens/DMDMH, phenoxyethanol/IPBC
- increasing importance of new preservative systems
- Certain trend towards acid preservation
- Innovation opportunity from Clariant:
  Piroctone Olamine blends Nipaguard PO5, POB and POM

# *Clariant Preservatives for Wet Wipes*

Clariant
Exactly your chemistry.

| | | |
|---|---|---|
| Nipaguard® IPP2 | Phenoxyethanol and Iodoproynyl Butylcarbamate | With IPBC for excellent action against yeast&mould |
| Phenonip® | Phenoxyethanol and Methylparaben and Ethylparaben and Butylparaben and Propylparaben and Isobutylparaben | Market standard |
| Phenonip® XB | Phenoxyethanol and Methylparaben and Ethylparaben and Propylparaben | Without C4 parabens |
| Phenonip® ME | Phenoxyethanol and Methylparaben and Ethylparaben | Low temperature stable blend |
| Nipaguard® PO5 | Phenoxyethanol and Piroctone Olamine | Excellent protection against yeast and mould |
| Nipaguard® POB | Phenoxyethanol and Benzoic Acid and Piroctone Olamine | Excellent protection against yeast and mould |
| Nipaguard® POM | Phenoxyethanol and Methylparaben and Piroctone Olamine | Excellent protection against yeast and mould |

  

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Exactly your chemistry.

# *Guide Formulations*

**R&D Personal Care**

Clariant Produkte (Deutschland) GmbH
Division Functional Chemicals
D-65926 Frankfurt am Main

# WET WIPE FORMULATION

**AV / 1003**

With Nipaguard PO 5

Recipe:

| | | | |
|---|---|---|---|
| A | **Emulsogen® HCP 049**<br>*PEG-40 Hydrogenated Castor Oil and Propylene Glycol* | **(Clariant)** | **1.00 %** |
| B | Dipropylene Glycol | | 0.80 % |
| | Softigen 767<br>*PEG-6 Caprylic / Capric / Glycerides* | | 1.00 % |
| | Crodamol AB<br>*C12-15 Alkyl Benzoate* | | 1.20 % |
| | **Nipaguard® PO 5**<br>*Phenoxyethanol (and) Piroctone Olamine* | **(Clariant)** | **0.80 %** |
| C | Wasser | | 94.60 % |
| D | Trisodium Citrate Dihydrate | | 0.20 % |
| | Baypure CX 100<br>*Tetrasodium Imindisuccinate* | | 0.40 % |

Procedure:

I. Add the components of B one after another into A and stir after each addition until clear.
II. Dissolve the components of D in C and add to I.
III. Stir for 10 to 15 minutes.

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# RECIPE FOR CLEANSING WET WIPES — AV / 1000

thin, low viscosity

## Recipe

| | | | |
|---|---|---|---|
| A | Water | | ad 100 % |
| | **Hostapon® KCG** | **(Clariant)** | **2.00 %** |
| | *Sodium Cocoyl Glutamate* | | |
| | **Emulsogen® HCP 049** | **(Clariant)** | **3.00 %** |
| | *PEG-40 Hydrogenated Castor Oil (and) Propylene Glycol* | | |
| | **Allantoin** | **(Clariant)** | **0.30 %** |
| | *Allantoin* | | |
| | **Aristoflex® PEA** | **(Clariant)** | **1.40 %** |
| | *Polypropylene Terephtalate* | | |
| | Fragrance | | 1.00 % |
| | **Nipaguard® BPX** | **(Clariant)** | **q.s.** |
| | *Phenoxyethanol (and) Methylparaben (and) Propylparaben (and) 2-bromo-2-nitropropane-1,3-diol* | | |

## Procedure

Mix one after another.

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Clariant

Exactly your chemistry.

# EMULSION FOR WET WIPES

**AV / 1002**

thin, low viscosity

Recipe

| | | | |
|---|---|---|---|
| A | **Emulsogen® HCP 049** | **(Clariant)** | **0.50 %** |
| | *PEG-40 Hydrogenated Castor Oil (and) Propylene Glycol (and) Water* | | |
| | **Hostaphat® KL 340 D** | **(Clariant)** | **1.00 %** |
| | *Trilaureth-4 Phosphate* | | |
| | **Velsan® CCT** | **(Clariant)** | **0.50 %** |
| | *Caprylic/Capric Triglyceride* | | |
| | Mineral Oil, low viscosity | | 0.50 % |
| B | Tocopheryl Acetate | | 0.20 % |
| | Panthenol | | 0.50 % |
| C | Water | | 95.0 % |
| | **Hostapon® CLG** | **(Clariant)** | **0.20 %** |
| | *Sodium-Lauroyl Glutamate* | | |
| | Citric Acid (10 % solution in water) | | 0.90 % |
| | Tetrasodium EDTA | | 0.05 % |
| | *Ethylendiamine Tetraacetic Acid-Sodium Salt* | | |
| | Sodium Hydroxide (10 % solution in water) | | 0.45 % |
| | **Allantoin** | **(Clariant)** | **0.20 %** |
| | *Allantoin* | | |
| | Preservative | | q.s. |

Procedure

| | |
|---|---|
| I | Add B to A. |
| II | Heat C to approx. 40 °C |
| III | Stir II into I and stir until cold. |

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# OILY CARE FOR WET WIPES — AV / 1001

thin, low viscosity

Recipe

| | | | |
|---|---|---|---|
| A | **Emulsogen® HCP 049**<br>*PEG-40 Hydrogenated Castor Oil (and) Propylene Glycol* | **(Clariant)** | **1.00 %** |
| | **Velsan® CCT**<br>*Caprylic/Capric Triglyceride* | **(Clariant)** | **25.00 %** |
| | Mineral Oil, low viscosity | | 50.00 % |
| | Isopropyl Palmitate | | 22.00 % |
| | **SilCare® Silicone 41M15**<br>*Caprylyl Methicone* | **(Clariant)** | **1.00 %** |
| | Fragrance | | 1.00 % |

Procedure

Mix one after another