

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 1 of 41

Revision date: 24.11.2014

## Section 1 Exposure scenario title

### Title:

Manufacture of substance

### Sector of use:

SU3: Industrial uses: Uses of substances as such or in mixtures at industrial sites

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC1: Manufacture of substances

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

Specific Environmental Release Category: ESVOC 1.1.v1

### Contributing Process Categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC15: Use as laboratory reagent

### Scope of processes and activities covered by the Exposure Scenario:

Manufacture of the substance or use as an intermediate or process chemical or extraction agent. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

#### Operational conditions of use

##### Physical form of product and vapour pressure:

Liquid, vapour pressure 0.5 - 10 kPa at STP [OC5]

##### Concentration of substance in product:

Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

##### Frequency and duration of use/exposure:

Covers daily exposures up to 8 hours (unless stated differently) [G2]

##### Other operational conditions affecting exposure:

Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

#### Contributing scenarios and risk management measures of worker exposure

##### General exposures (closed systems) [CS15] PROC1:

No other specific measures identified [EI20]

##### Material storage [CS67] PROC1:

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 2 of 41

Revision date: 24.11.2014

---

Store substance within a closed system [E84]

**Material storage [CS67] PROC2:**

Store substance within a closed system [E84]

**General exposures (closed systems) [CS15] PROC2:**

Handle substance within a closed system [E47]

**General exposures (closed systems) [CS15] PROC3:**

Handle substance within a closed system [E47]

**General exposures (open systems) [CS16] PROC4:**

No other specific measures identified [E120]

**Equipment cleaning and maintenance [CS39] PROC8a:**

No other specific measures identified [E120]

**Process sampling [CS2] PROC8b:**

No other specific measures identified [E120]

**Bulk transfers [CS14] (open systems) [CS108] PROC8b:**

No other specific measures identified [E120]

**Bulk transfers [CS14] (closed systems) [CS107] PROC8b:**

Handle substance within a closed system [E47]

**Laboratory activities [CS36] PROC15:**

No other specific measures identified [E120]

## Section 2.2 Control of environmental exposure

**Product characteristics:**

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

**Amounts used**

Maximum daily site tonnage (kg/day): 2500

**Frequency and duration of use**

Emission days (days/year): 20

**Environmental factors not influenced by risk management**

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

**Other given operational conditions affecting environmental exposure**

Release fraction to air from process (initial release prior to RMM): 0.05

Release fraction to wastewater from process (initial release prior to RMM): 0.0003

Release fraction to soil from process (initial release prior to RMM): 0.0001

**Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil**

Risk from environmental exposure is driven by freshwater sediment [TCR1b]. No wastewater treatment required [TCR6].

Treat air emission to provide a typical removal efficiency of (%): 90

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

**Organisation measures to prevent/limit release from site**

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 3 of 41

Revision date: 24.11.2014

---

## Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 96.2  
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2  
Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 720000  
Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 10000

## Conditions and measures related to external treatment of waste for disposal

During manufacturing no waste of the substance is generated [ETW4].

## Conditions and measures related to external recovery of waste

During manufacturing no waste of the substance is generated [ERW2].

## Section 3 Exposure estimation

### Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23]. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 4 of 41

Revision date: 24.11.2014

## Section 1 Exposure scenario title

### Title:

Distribution of substance

### Sector of use:

SU3: Industrial uses: Uses of substances as such or in mixtures at industrial sites

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC1: Manufacture of substances  
ERC2: Formulation of preparations  
ERC3: Formulation in materials  
ERC4: Industrial use of processing aids in processes and products, not becoming part of articles  
ERC5: Industrial use resulting in inclusion into or onto a matrix  
ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)  
ERC6b: Industrial use of reactive processing aids  
ERC6c: Industrial use of monomers for polymerization  
ERC6d: Industrial use of auxiliaries for polymerization processes in production of resins, rubbers, polymers  
ERC7: Industrial use of substances in closed systems  
Specific Environmental Release Category: ESVOC 1.1b.v1

### Contributing Process Categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure  
PROC2: Use in closed, continuous process with occasional controlled exposure  
PROC3: Use in closed batch process (synthesis or formulation)  
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises  
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities  
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)  
PROC15: Use as laboratory reagent

### Scope of processes and activities covered by the Exposure Scenario:

Bulk loading (including marine vessel/barge, road/rail car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading, maintenance and associated laboratory activities. Excludes emissions during transport.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

#### Operational conditions of use

##### Physical form of product and vapour pressure:

Liquid, vapour pressure 0.5 - 10 kPa at STP [OC5]

##### Concentration of substance in product:

Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

##### Frequency and duration of use/exposure:

Covers daily exposures up to 8 hours (unless stated differently) [G2]

##### Other operational conditions affecting exposure:

Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

# Annex to the extended Safety Data Sheet



Substance: Iparzol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 5 of 41

Revision date: 24.11.2014

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## Contributing scenarios and risk management measures of worker exposure

### General exposures (closed systems) [CS15] PROC1:

Handle substance within a closed system [E47]

### General exposures (closed systems) [CS15] PROC2:

Handle substance within a closed system [E47]

### General exposures (closed systems) [CS15] PROC3:

Handle substance within a closed system [E47]

### Material storage [CS67] PROC1:

Store substance within a closed system [E84]

### Material storage [CS67] PROC2:

Store substance within a closed system [E84]

### Process sampling [CS2] PROC3:

No other specific measures identified [E120]

### General exposures (open systems) [CS16] PROC4:

No other specific measures identified [E120]

### Equipment cleaning and maintenance [CS39] PROC8a:

No other specific measures identified [E120]

### Bulk transfers [CS14] (open systems) [CS108] PROC8b:

No other specific measures identified [E120]

### Bulk transfers [CS14] (closed systems) [CS107] PROC8b:

No other specific measures identified [E120]

### Drum and small package filling [CS6] PROC9:

No other specific measures identified [E120]

### Laboratory activities [CS36] PROC15:

No other specific measures identified [E120]

## Section 2.2 Control of environmental exposure

### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

### Amounts used

Maximum daily site tonnage (kg/day): 0.05

### Frequency and duration of use

Emission days (days/year): 20

### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.001

Release fraction to wastewater from process (initial release prior to RMM): 0.00001

Release fraction to soil from process (initial release prior to RMM): 0.00001

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 6 of 41

Revision date: 24.11.2014

## Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].  
Treat air emission to provide a typical removal efficiency of (%): 90  
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

## Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

## Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 96.2  
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 6.2  
Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 14000  
Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

## Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

## Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23]. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 7 of 41

Revision date: 24.11.2014

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## Section 1 Exposure scenario title

### Title:

Formulation & (re)packing of substances and mixtures

### Sector of use:

SU3: Industrial uses: Uses of substances as such or in mixtures at industrial sites

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC2: Formulation of preparations

Specific Environmental Release Category: ESVOC 2.2.v1

### Contributing Process Categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelettisation

PROC15: Use as laboratory reagent

### Scope of processes and activities covered by the Exposure Scenario:

Formulation, packing, and re-packing of the substance and its mixtures in batch or continuous operations, including storage, material transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

#### Operational conditions of use

##### Physical form of product and vapour pressure:

Liquid, vapour pressure 0.5 – 10 kPa at STP [OC5]

##### Concentration of substance in product:

Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

##### Frequency and duration of use/exposure:

Covers daily exposures up to 8 hours (unless stated differently) [G2]

##### Other operational conditions affecting exposure:

Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

### Contributing scenarios and risk management measures of worker exposure

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 8 of 41

Revision date: 24.11.2014

**General exposures (closed systems) [CS15] PROC1:**

Handle substance within a closed system [E47]

**General exposures (closed systems) [CS15] PROC2:**

Handle substance within a closed system [E47]

**General exposures (closed systems) [CS15] PROC3:**

Handle substance within a closed system [E47]

**Material storage [CS67] PROC1:**

Store substance within a closed system [E84] Transfer via enclosed lines [E52]

**Material storage [CS67] PROC2:**

Store substance within a closed system [E84] Transfer via enclosed lines [E52]

**Process sampling [CS2] PROC3:**

Avoid dip sampling [E42]

**Batch processes at elevated temperatures [CS136] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] PROC3:**

Formulate in enclosed or ventilated mixing vessels [E46]

**General exposures (open systems) [CS16] PROC4:**

No other specific measures identified [E120]

**Mixing operations (open systems) [CS30] PROC5:**

No other specific measures identified [E120]

**Manual [CS34] transfer from/pouring from containers [CS22] PROC8a:**

Use drum pumps or carefully pour from container [E64]

**Equipment cleaning and maintenance [CS39] PROC8a:**

No other specific measures identified [E120]

**Bulk transfers [CS14] PROC8b:**

No other specific measures identified [E120]

**Drum/batch transfers [CS8] PROC8b:**

Use drum pumps or carefully pour from container [E64]

**Drum and small package filling [CS6] PROC9:**

No other specific measures identified [E120]

**Production or preparation of articles by tableting, compression, extrusion or pelletisation [CS100] PROC14:**

No other specific measures identified [E120]

**Laboratory activities [CS36] PROC15:**

No other specific measures identified [E120]

## Section 2.2 Control of environmental exposure

**Product characteristics:**

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

**Amounts used**

Maximum daily site tonnage (kg/day): 1000

**Frequency and duration of use**

Emission days (days/year): 10



# Annex to the extended Safety Data Sheet



Substance: Iparzol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 9 of 41

Revision date: 24.11.2014

## Environmental factors not influenced by risk management

Local freshwater dilution factor: 10  
Local marine water dilution factor: 100

## Other given operational conditions affecting environmental exposure

Release fraction to air from process (after typical onsite RMMs, consistent with EU Solvent Emissions Directive requirements): 0.025  
Release fraction to wastewater from process (initial release prior to RMM): 0.0002  
Release fraction to soil from process (initial release prior to RMM): 0.0001

## Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater sediment [TCR1b]. No wastewater treatment required [TCR6].  
Treat air emission to provide a typical removal efficiency of (%): 0  
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

## Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

## Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 96.2  
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2  
Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 220000  
Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

## Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

## Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23]. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal

## Annex to the extended Safety Data Sheet

Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 10 of 41



Revision date: 24.11.2014

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efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 11 of 41

Revision date: 24.11.2014

## Section 1 Exposure scenario title

### Title:

Use in coatings (industrial application)

### Sector of use:

SU3: Industrial uses: Uses of substances as such or in mixtures at industrial sites

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles  
Specific Environmental Release Category: ESVOG 4.3a.v1

### Contributing Process Categories [PROC]:

- PROC1: Use in closed process, no likelihood of exposure
- PROC2: Use in closed, continuous process with occasional controlled exposure
- PROC3: Use in closed batch process (synthesis or formulation)
- PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
- PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
- PROC7: Industrial spraying
- PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
- PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
- PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
- PROC10: Roller application or brushing of adhesive and other coating
- PROC13: Treatment of articles by dipping and pouring
- PROC14: Production of preparations or articles by tableting, compression, extrusion, pelettisation.
- PROC15: Use as laboratory reagent

### Scope of processes and activities covered by the Exposure Scenario:

Covers the use in coatings (paints, inks, adhesives, etc.) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidized bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

#### Operational conditions of use

##### Physical form of product and vapour pressure:

Liquid, vapour pressure 0.5 – 10 kPa at STP [OC4]

##### Concentration of substance in product:

Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

##### Frequency and duration of use/exposure:

Covers daily exposures up to 8 hours (unless stated differently) [G2]

##### Other operational conditions affecting exposure:

Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 12 of 41

Revision date: 24.11.2014

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## Contributing scenarios and risk management measures of worker exposure

### General exposures (closed systems) [CS15] PROC1:

Handle substance within a closed system [E47]

### Material storage [CS67] PROC1:

No other specific measures identified [E120]

### General exposures (closed systems) [CS15] with sample collection [CS56] Use in contained systems [CS38] PROC2:

Handle substance within a closed system [E47]

### Film formation – force drying (50 – 100 °C). Stoving (> 100 °C). UV/EB radiation curing [CS94] Operation is carried out at elevated temperature (> 20 °C above ambient temperature [OC7] PROC2:

Handle substance within a closed system [E47]

### Mixing operations (closed systems) [CS29] General exposures (closed systems) [CS15] PROC3:

No other specific measures identified [E120]

### Film formation – air drying [CS95] PROC4:

No other specific measures identified [E120]

### Preparation of material for application [CS96] Mixing operations (open systems ) [CS30] PROC5:

No other specific measures identified [E120]

### Spraying (automatic/robotic) [CS97] PROC7:

No other specific measures identified [E120]

### Manual [CS34] spraying [CS10] PROC7:

No other specific measures identified [E120]

### Equipment cleaning and maintenance [CS39] PROC8a:

No other specific measures identified [E120]

### Material transfers [CS3] PROC8a:

Clear transfer lines prior to de-coupling [E39]

### Material transfers [CS3] PROC8b:

Clear transfer lines prior to de-coupling [E39]

### Material transfers [CS3] Drum/batch transfers [CS8] Transfer from/pouring from containers [CS22] PROC9:

No other specific measures identified [E120]

### Roller, spreader, flow application [CS98] PROC10:

No other specific measures identified [E120]

### Dipping, immersion and pouring [CS4] PROC13:

No other specific measures identified [E120]

### Production or preparation of articles by tableting, compression extrusion or pelletisation [CS100] PROC14:

No other specific measures identified [E120]

### Laboratory activities [CS36] PROC15:

No other specific measures identified [E120]

## Section 2.2 Control of environmental exposure

Product characteristics:

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 13 of 41

Revision date: 24.11.2014

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

## Amounts used

Maximum daily site tonnage (kg/day): 2400

## Frequency and duration of use

Emission days (days/year): 20

## Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

## Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.98

Release fraction to wastewater from process (initial release prior to RMM): 0.00007

Release fraction to soil from process (initial release prior to RMM): 0

## Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater sediment [TCR1b]. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required [TCR10].

Treat air emission to provide a typical removal efficiency of (%): 90

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0.3  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

## Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

## Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 96.2

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2

Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 62000

Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

## Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

## Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 14 of 41

Revision date: 24.11.2014

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Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

## Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 15 of 41

Revision date: 24.11.2014

## Section 1 Exposure scenario title

### Title:

Use in Cleaning Agents (industrial use as a component of cleaning products)

### Sector of use:

SU3: Industrial uses: Uses of substances as such or in mixtures at industrial sites

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles  
Specific Environmental Release Category: ESVOC 4.4a.v1

### Contributing Process Categories [PROC]:

PROC2: Use in closed, continuous process with occasional controlled exposure  
PROC3: Use in closed batch process (synthesis or formulation)  
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises  
PROC7: Industrial spraying  
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities  
PROC10: Roller application or brushing of adhesive and other coating  
PROC13: Treatment of articles by dipping and pouring

### Scope of processes and activities covered by the Exposure Scenario:

Covers the use as a component of cleaning products including transfers from storage, pouring/unloading from drums or containers. Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

#### Operational conditions of use

##### Physical form of product and vapour pressure:

Liquid, vapour pressure 0.5 – 10 kPa at STP [OC5]

##### Concentration of substance in product:

Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

##### Frequency and duration of use/exposure:

Covers daily exposures up to 8 hours (unless stated differently) [G2]

##### Other operational conditions affecting exposure:

Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

#### Contributing scenarios and risk management measures of worker exposure

##### Material storage [CS67] PROC1:

No other specific measures identified [EI20]

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 16 of 41

Revision date: 24.11.2014

## **Automated process with (semi) closed systems [CS93]. Use in contained systems [CS38] PROC2:**

No other specific measures identified [E120]

## **Application of cleaning products in closed systems [CS101] PROC2:**

No other specific measures identified [E120]

## **Automated process with (semi) closed systems [CS93]. Drum/batch transfers [CS8] Use in contained systems [CS38] PROC3:**

No other specific measures identified [E120]

## **Use in contained batch processes [CS37] PROC4:**

No other specific measures identified [E120]

## **Cleaning with high pressure washers [CS44] PROC7:**

No other specific measures identified [E120]

## **Bulk transfers [CS14] PROC8a:**

No other specific measures identified [E120]

## **Filling/preparation of equipment from drums or containers [CS45] PROC8b:**

No other specific measures identified [E120]

## **Cleaning with low-pressure washers [CS42] PROC10:**

No other specific measures identified [E120]

## **Manual [CS34] surfaces [CS48] cleaning [CS47] PROC10:**

No other specific measures identified [E120]

## **Degreasing small objects in cleaning station [CS41] PROC13:**

No other specific measures identified [E120]

## **Section 2.2 Control of environmental exposure**

### **Product characteristics:**

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

### **Amounts used**

Maximum daily site tonnage (kg/day): 25

### **Frequency and duration of use**

Emission days (days/year): 20

### **Environmental factors not influenced by risk management**

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

### **Other given operational conditions affecting environmental exposure**

Release fraction to air from process (initial release prior to RMM): 1.0

Release fraction to wastewater from process (initial release prior to RMM): 0.000003

Release fraction to soil from process (initial release prior to RMM): 0

### **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil**

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].

Treat air emission to provide a typical removal efficiency of (%): 70

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency



# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 17 of 41

Revision date: 24.11.2014

of >=(%): 0

## Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

## Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 96.2  
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2  
Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 4900000  
Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

## Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

## Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23]. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 18 of 41

Revision date: 24.11.2014

## Section 1 Exposure scenario title

### Title:

Use in coatings (professional application)

### Sector of use:

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC8a: Wide dispersive indoor use of processing aids in open systems

ERC8d: Wide dispersive outdoor use of processing aids in open systems

Specific Environmental Release Category: ESVOC 8.3b.v1

### Contributing Process Categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC10: Roller application or brushing of adhesive and other coating

PROC11: Non industrial spraying

PROC13: Treatment of articles by dipping and pouring

PROC15: Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE available

### Scope of processes and activities covered by the Exposure Scenario:

Covers the use in coatings (paints, inks, adhesives, etc.) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods and film formation) and equipment cleaning, maintenance and associated laboratory activities.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

#### Operational conditions of use

##### Physical form of product and vapour pressure:

Liquid, vapour pressure 0.5 - 10 kPa at STP [OC4]

##### Concentration of substance in product:

Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

##### Frequency and duration of use/exposure:

Covers daily exposures up to 8 hours (unless stated differently) [G2]

##### Other operational conditions affecting exposure:

Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 19 of 41

Revision date: 24.11.2014

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## Contributing scenarios and risk management measures of worker exposure

### General exposures (closed systems) [CS15] PROC1:

Handle Substance within a closed system. [E47]

### General exposures (closed systems) [CS15] Use in contained systems [CS38] PROC2:

Handle Substance within a closed system. [E47]

### Filling/preparation of equipment from drums or containers [CS45] Use in contained systems [CS38] PROC2:

Handle Substance within a closed system. [E47]

### Preparation of material for application [CS96] Use in contained batch processes [CS37] PROC3:

No other specific measures identified [E120]

### Film formation – air drying [CS95] Outdoor [OC9] PROC4:

No other specific measures identified [E120]

### Film formation – air drying [CS95] Indoor [OC8] PROC4:

No other specific measures identified [E120]

### Preparation of material for application [CS96] Indoor [OC8] PROC5:

No other specific measures identified [E120]

### Preparation of material for application [CS96] Outdoor [OC9] PROC5:

No other specific measures identified [E120]

### Material transfers [CS3] Drum/batch transfers [CS8] PROC8a:

No other specific measures identified [E120]

### Material transfers [CS3] Drum/batch transfers [CS8] Dedicated facility [CS81] PROC8b:

No other specific measures identified [E120]

### Roller, spreader, flow application [CS98] Indoor [OC8] PROC10:

No other specific measures identified [E120]

### Roller, spreader, flow application [CS98] Outdoor [OC9] PROC10:

No other specific measures identified [E120]

### Manual [CS34] spraying [CS10] Indoor [OC8] PROC11:

No other specific measures identified [E120]

### Manual [CS34] spraying [CS10] Outdoor [OC9] PROC11:

No other specific measures identified [E120]

### Dipping, immersion and pouring [CS4] Indoor [OC8] PROC13:

No other specific measures identified [E120]

### Dipping, immersion and pouring [CS4] Outdoor [OC9] PROC13:

No other specific measures identified [E120]

### Laboratory activities [CS36] PROC15:

No other specific measures identified [E120]

### Hand application – finger paints, pastels, adhesives [CS72] Indoor [OC8] PROC19:

No other specific measures identified [E120]

### Hand application – finger paints, pastels, adhesives [CS72] Outdoor [OC9] PROC19:

No other specific measures identified [E120]

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 20 of 41

Revision date: 24.11.2014

## Section 2.2 Control of environmental exposure

### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

### Amounts used

Maximum daily site tonnage (kg/day): 0.014

### Frequency and duration of use

Emission days (days/year): 365

### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.98

Release fraction to wastewater from process (initial release prior to RMM): 0.01

Release fraction to soil from process (initial release prior to RMM): 0.01

### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].

Treat air emission to provide a typical removal efficiency of (%): N/A

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

### Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

### Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 96.2

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2

Maximum allowable site tonnage ( $M_{Safe}$ ) based on release following total wastewater treatment removal (kg/day): 2100

Assumed domestic sewage treatment plant flow ( $m^3/day$ ): 2000

### Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 21 of 41

Revision date: 24.11.2014

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Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

## Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

# Annex to the extended Safety Data Sheet



Substance: Iparzol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 22 of 41

Revision date: 24.11.2014

## Section 1 Exposure scenario title

### Title:

Use in cleaning agents (professional application)

### Sector of use:

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC8a: Wide dispersive indoor use of processing aids in open systems

ERC8d: Wide dispersive outdoor use of processing aids in open systems

Specific Environmental Release Category: 8.4b.v.1

### Contributing Process Categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC10: Roller application or brushing of adhesive and other coating

PROC11: Non industrial spraying

PROC13: Treatment of articles by dipping and pouring

### Scope of processes and activities covered by the Exposure Scenario:

Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand)

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

#### Operational conditions of use

##### Physical form of product and vapour pressure:

Liquid, vapour pressure 0.5 – 10 kPa at STP [OC5]

##### Concentration of substance in product:

Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

##### Frequency and duration of use/exposure:

Covers daily exposures up to 8 hours (unless stated differently) [G2]

##### Other operational conditions affecting exposure:

Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

#### Contributing scenarios and risk management measures of worker exposure

##### Material storage [CS67] PROC1:

No other specific measures identified [EI20]

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 23 of 41

Revision date: 24.11.2014

**Automated process with (semi) closed system [CS93] Use in contained system [CS38] PROC2:**  
No other specific measures identified [E120]

**Automated process with (semi) closed system [CS93] Drum/batch transfers [CS8] Used in contained systems [CS38] PROC3:**  
No other specific measures identified [E120]

**Semi Automated process (e.g.: Semi automatic application of floor care and maintenance products) [CS76] PROC4:**  
No other specific measures identified [E120]

**Application of cleaning products in closed systems [CS101] Outdoor [OC9] PROC4:**  
No other specific measures identified [E120]

**Cleaning of medical devices [CS74] PROC4:**  
No other specific measures identified [E120]

**Filling / preparation of equipment from drums or containers. [CS45] PROC8a:**  
No other specific measures identified [E120]

**Filling / preparation of equipment from drums or containers. [CS45] PROC8b:**  
No other specific measures identified [E120]

**Manual [CS34] Surfaces [CS48] Cleaning [CS47] Spraying [CS10] PROC10:**  
No other specific measures identified [E120]

**Ad hoc manual application via trigger sprays, dipping, etc. [CS27] Rolling, Brushing [CS51] PROC10:**  
No other specific measures identified [E120]

**Ad hoc manual application via trigger sprays, dipping, etc. [CS27] Rolling, Brushing [CS51] PROC10:**  
No other specific measures identified [E120]

**Cleaning with high-pressure washers [CS44] Spraying [CS10] Indoor [OC8] PROC11:**  
No other specific measures identified [E120]

**Cleaning with high-pressure washers [CS44] Spraying [CS10] Outdoor [OC9] PROC11:**  
No other specific measures identified [E120]

**Manual [CS34] Surfaces [CS48] Cleaning [CS47] Dipping, immersion and pouring [CS4] PROC13:**  
No other specific measures identified [E120]

## Section 2.2 Control of environmental exposure

### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

### Amounts used

Maximum daily site tonnage (kg/day): 0.00068

### Frequency and duration of use

Emission days (days/year): 365

### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 24 of 41

Revision date: 24.11.2014

## Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.02  
Release fraction to wastewater from process (initial release prior to RMM): 0.000001  
Release fraction to soil from process (initial release prior to RMM): 0

## Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].  
Treat air emission to provide a typical removal efficiency of (%): N/A  
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of  $\geq$ (%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq$ (%): 0

## Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

## Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 96.2  
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2  
Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 190  
Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

## Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

## Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].  
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23]. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).



# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 25 of 41

Revision date: 24.11.2014

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## Section 1 Exposure scenario title

### Title:

Use in agrochemicals

### Sector of use:

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC8a: Wide dispersive indoor use of processing aids in open systems

ERC8d: Wide dispersive outdoor use of processing aids in open systems

Specific Environmental Release Category: ESVOC 8.11a.v1

### Contributing Process Categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC11: Non industrial spraying

PROC13: Treatment of articles by dipping and pouring

### Scope of processes and activities covered by the Exposure Scenario:

Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

#### Operational conditions of use

##### Physical form of product and vapour pressure:

Liquid, vapour pressure 0.5 – 10 kPa at STP [OC5]

##### Concentration of substance in product:

Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

##### Frequency and duration of use/exposure:

Covers daily exposures up to 8 hours (unless stated differently) [G2]

##### Other operational conditions affecting exposure:

Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

### Contributing scenarios and risk management measures of worker exposure

#### Material storage [CS67] PROC1:

Store substance within a closed system [E84]

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 26 of 41

Revision date: 24.11.2014

## Material storage [CS67] PROC2:

Store substance within a closed system [E84]

## Mixing and blending [CS23] PROC4:

No other specific measures identified [E120]

## Disposal of wastes [CS28] PROC8a:

No other specific measures identified [E120]

## Clean-down and maintenance of equipment [CS26] PROC8a:

No other specific measures identified [E120]

## Transfer from/pouring from containers [CS22] PROC8b:

No other specific measures identified [E120]

## Spraying/fogging by manual application [CS24] PROC11:

No other specific measures identified [E120]

## Spraying/fogging by machine application [CS25] PROC11:

No other specific measures identified [E120]

## Ad hoc manual application via trigger sprays, dipping, etc. [CS27] PROC13:

No other specific measures identified [E120]

## Section 2.2 Control of environmental exposure

### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

### Amounts used

Maximum daily site tonnage (kg/day): 0.014

### Frequency and duration of use

Emission days (days/year): 365

### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.9

Release fraction to wastewater from process (initial release prior to RMM): 0.01

Release fraction to soil from process (initial release prior to RMM): 0.09

### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].

Treat air emission to provide a typical removal efficiency of (%): N/A

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

### Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

### Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 96.2

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 27 of 41

Revision date: 24.11.2014

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Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2  
Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 2200  
Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

## Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

## Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23]. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 28 of 41

Revision date: 24.11.2014

## Section 1 Exposure scenario title

### Title:

Use in coatings (consumer applications)

### Sector of use:

SU21: Consumer uses: Private households (= general public = consumers)

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC8a: Wide dispersive indoor use of processing aids in open systems.  
ERC8d: Wide dispersive outdoor use of processing aids in open systems  
Specific Environmental Release Category: ESVOC 8.3c.v1

### Contributing Product Category [PC]:

PC1: Adhesives, sealants  
PC4: Anti-Freeze and de-icing products  
PC8: Biocidal products (e.g. disinfectants, pest control)  
PC9a: Coatings and paints, thinners, paint removers  
PC9b: Fillers, putties, plasters, modelling clay  
PC9c: Finger paints  
PC15: Non-metal-surface treatment products  
PC18: Ink and toners  
PC23: Leather tanning, dye, finishing, impregnation and care products  
PC24: Lubricants, greases, release products  
PC31: Polishes and wax blends  
PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids

### Scope of processes and activities covered by the Exposure Scenario:

Covers the use in coatings (paints, inks, adhesives, etc.) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of consumer exposure

#### Operational conditions of use

##### Physical form of product and vapour pressure:

Liquid, vapour pressure 0.5 - 10 kPa [OC4]

##### Concentration of substance in product:

Unless otherwise stated, covers concentrations up to 100% [ConsOC1]

##### Amounts used:

Unless otherwise stated, covers use amounts up to 13800g [ConsOC2]; covers skin contact area up to 857.5cm<sup>2</sup> [ConsOC5]

##### Frequency and duration of use/exposure:

Unless otherwise stated, covers use frequency up to 365 days per year [ConsOC3]; unless otherwise stated, covers use frequency up to 1 times per day [ConsOC4]; covers exposure up to 6 hours per event [ConsOC14]

##### Other operational conditions affecting exposure:

Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m<sup>3</sup> room [ConsOC11]; assumes use with typical ventilation [ConsOC8]

## Contributing scenarios and risk management measures of consumer exposure

### PC1:Adhesives, sealants--Glues, hobby use

#### OC

Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 35.73 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 9g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup> [ConsOC11]; for each use event, covers exposure up to 4.00hr/event [ConsOC14];

#### RMM

No specific RMMs identified beyond those OCs stated

### PC1Adhesives, sealants--Glues DIY-use (carpet glue, tile glue, wood parquet glue)

#### OC

Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 1 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 110.00 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 6390g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 6.00hr/event[ConsOC14];

#### RMM

No specific RMMs identified beyond those OCs stated:

### PC1:Adhesives, sealants--Glue from spray

#### OC

Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 6 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.73 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 85.05g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 4.00hr/event[ConsOC14];

#### RMM

No specific RMMs identified beyond those OCs stated

### PC1:Adhesives, sealants—Sealants

#### OC

Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.73 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 75g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 1.00hr/event[ConsOC14];

#### RMM

No specific RMMs identified beyond those OCs stated

### PC4\_n:Anti-freeze and de-icing products--Washing car window

#### OC

Unless otherwise stated, covers concentrations up to 1% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; for each use event, covers use amounts up to 0.5g [ConsOC2]; Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation [ConsOC10]; covers use in room size of 34m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.02hr/event[ConsOC14];

#### RMM

No specific RMMs identified beyond those OCs stated

### PC4\_n:Anti-freeze and de-icing products--Pouring into radiator

#### OC

Unless otherwise stated, covers concentrations up to 10% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.00 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 2000g [ConsOC2]; Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation [ConsOC10]; covers use in room size of 34m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];

#### RMM

No specific RMMs identified beyond those OCs stated

### PC4\_n:Anti-freeze and de-icing products--Lock de-icer

#### OC

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 214.40 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 4g [ConsOC2]; Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation [ConsOC10]; covers use in room size of 34m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.25hr/event[ConsOC14];

**RMM**

No specific RMMs identified beyond those OCs stated

**PC8\_n: Biocidal products (excipient use only for solvent products)--Laundry and dish washing products**  
**OC**

Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 15g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.50hr/event[ConsOC14];

**RMM**

No specific RMMs identified beyond those OCs stated

**PC8\_n: Biocidal products (excipient use only for solvent products)--Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners )**  
**OC**

Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 128 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 27g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];

**RMM**

No specific RMMs identified beyond those OCs stated

**PC8\_n: Biocidal products (excipient use only for solvent products)--Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)**  
**OC**

Unless otherwise stated, covers concentrations up to 15% [ConsOC1]; covers use up to 128 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.00 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 35g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];

**RMM**

No specific RMMs identified beyond those OCs stated

**PC9a:Coatings and paints, fillers putties, thinners--Waterborne latex wall paint**  
**OC**

Unless otherwise stated, covers concentrations up to 1.5% [ConsOC1]; covers use up to 4 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 2760g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 2.20hr/event[ConsOC14];

**RMM**

No specific RMMs identified beyond those OCs stated

**PC9a:Coatings and paints, fillers putties, thinners--Solvent rich, high solid, water borne paint**  
**OC**

Unless otherwise stated, covers concentrations up to 27.5% [ConsOC1]; covers use up to 6 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 744g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 2.20hr/event[ConsOC14];

**RMM**

No specific RMMs identified beyond those OCs stated

**PC9a:Coatings and paints, fillers putties, thinners--Aerosol spray can**  
**OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 2 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; for each use event, covers use amounts up to 215g [ConsOC2]; Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation [ConsOC10]; covers use in room size of 34m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];

**RMM**

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 31 of 41

Revision date: 24.11.2014

No specific RMMs identified beyond those OCs stated

## **PC9a:Coatings and paints, fillers putties, thinners--Removers (paint-, glue-, wall paper-, sealant-remover)**

### **OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 3 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 491g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 2.00hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC9b:Fillers, putties, plasters, modeling clay--Fillers and putty**

### **OC**

Unless otherwise stated, covers concentrations up to 2% [ConsOC1]; covers use up to 12 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.73 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 85g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 4.00hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC9b:Fillers, putties, plasters, modeling clay--Plasters and floor equalizers**

### **OC**

Unless otherwise stated, covers concentrations up to 2% [ConsOC1]; covers use up to 12 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 13800g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 2.00hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC9b:Fillers, putties, plasters, modeling clay--Modelling clay**

### **OC**

Unless otherwise stated, covers concentrations up to 1% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 254.40 cm<sup>2</sup> [ConsOC5]; for each use event, assumes swallowed amount of 1g [ConsOC13];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC9c:Finger paints --Finger paints**

### **OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 254.40 cm<sup>2</sup> [ConsOC5]; for each use event, assumes swallowed amount of 1.35g [ConsOC13];

### **RMM**

Avoid using at a product concentration greater than 5% [ConsRMM1]

## **PC15\_n: Non-metal surface treatment products--Waterborne latex wall paint**

### **OC**

Unless otherwise stated, covers concentrations up to 1.5% [ConsOC1]; covers use up to 4 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 2760g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 2.20hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC15\_n: Non-metal surface treatment products--Solvent rich, high solid, water borne paint**

### **OC**

Unless otherwise stated, covers concentrations up to 27.5% [ConsOC1]; covers use up to 6 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 744g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 2.20hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC15\_n: Non-metal surface treatment products--Aerosol spray can**

### **OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 2 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; for each use event, covers use amounts up to 215g [ConsOC2]; Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation [ConsOC10]; covers use in room size of 34m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC15\_n: Non-metal surface treatment products--Removers (paint-, glue-, wall paper-, sealant-remover)**

### **OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 3 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 491g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 2.00hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC18\_n: Ink and toners--Inks and toners**

### **OC**

Unless otherwise stated, covers concentrations up to 10% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 71.40 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 40g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 2.20hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC23\_n: Leather tanning, dye, finishing, impregnation and care products--Polishes, wax / cream (floor, furniture, shoes)**

### **OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 29 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 430.00 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 56g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 1.23hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC23\_n: Leather tanning, dye, finishing, impregnation and care products--Polishes, spray (furniture, shoes)**

### **OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 8 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 430.00 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 56g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC24: Lubricants, greases, and release products—Liquids**

### **OC**

Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 4 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 468.00 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 2200g [ConsOC2]; Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation [ConsOC10]; covers use in room size of 34m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC24: Lubricants, greases, and release products—Pastes**

### **OC**



# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 33 of 41

Revision date: 24.11.2014

Unless otherwise stated, covers concentrations up to 20% [ConsOC1]; covers use up to 10 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 468.00 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 34g [ConsOC2];

#### **RMM**

No specific RMMs identified beyond those OCs stated

#### **PC24: Lubricants, greases, and release products—Sprays**

##### **OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 6 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 73g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];

#### **RMM**

No specific RMMs identified beyond those OCs stated

#### **PC31:Polishes and wax blends--Polishes, wax / cream (floor, furniture, shoes)**

##### **OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 29 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 430.00 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 142g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 1.23hr/event[ConsOC14];

#### **RMM**

No specific RMMs identified beyond those OCs stated

#### **PC31:Polishes and wax blends--Polishes, spray (furniture, shoes)**

##### **OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 8 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 430.00 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 35g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];

#### **RMM**

No specific RMMs identified beyond those OCs stated

#### **PC34\_n: Textile dyes, finishing and impregnating products—**

##### **OC**

Unless otherwise stated, covers concentrations up to 10% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 115g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 1.00hr/event[ConsOC14];

#### **RMM**

No specific RMMs identified beyond those OCs stated

## Section 2.2 Control of environmental exposure

#### **Product characteristics:**

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### **Amounts used**

Maximum daily site tonnage (kg/day): 0.014

#### **Frequency and duration of use**

Emission days (days/year): 365

#### **Environmental factors not influenced by risk management**

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

#### **Other given operational conditions affecting environmental exposure**

Release fraction to air from process (initial release prior to RMM): 0.985

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 34 of 41

Revision date: 24.11.2014

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Release fraction to wastewater from process (initial release prior to RMM): 0.01  
Release fraction to soil from process (initial release prior to RMM): 0.005

### Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 96.2  
Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 2100  
Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

### Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].  
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].  
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

# Annex to the extended Safety Data Sheet



Substance: Iparzol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 35 of 41

Revision date: 24.11.2014

## Section 1 Exposure scenario title

### Title:

Use in Cleaning agents (consumer applications)

### Sector of use:

SU21: Consumer uses: Private households (= general public = consumers)

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC8a: Wide dispersive indoor use of processing aids in open systems.  
ERC8d: Wide dispersive outdoor use of processing aids in open systems  
Specific Environmental Release Category: ESVOC 8.4c.v1

### Contributing Product Category [PC]:

PC3: Air care products  
PC4: Anti-Freeze and de-icing products  
PC8: Biocidal products (e.g. disinfectants, pest control)  
PC9a: Coatings and paints, thinners, paint removers  
PC9b: Fillers, putties, plasters, modelling clay  
PC9c: Finger paints  
PC24: Lubricants, greases, release products  
PC35: Washing and cleaning products (including solvent based products)  
PC38: Welding and soldering products, flux products

### Scope of processes and activities covered by the Exposure Scenario:

Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of consumer exposure

#### Operational conditions of use

##### Physical form of product and vapour pressure:

Liquid, vapour pressure 0.5 - 10 kPa [OC4]

##### Concentration of substance in product:

Unless otherwise stated, covers concentrations up to 100% [ConsOC1]

##### Amounts used:

Unless otherwise stated, covers use amounts up to 13800g [ConsOC2]; covers skin contact area up to 857.5cm<sup>2</sup> [ConsOC5]

##### Frequency and duration of use/exposure:

Unless otherwise stated, covers use frequency up to 365 days per year [ConsOC3]; unless otherwise stated, covers use frequency up to 4 times per day [ConsOC4]; covers exposure up to 8 hours per event [ConsOC14]

##### Other operational conditions affecting exposure:

Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m<sup>3</sup> room [ConsOC11]; assumes use with typical ventilation [ConsOC8]

#### Contributing scenarios and risk management measures of consumer exposure

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 36 of 41

Revision date: 24.11.2014

## **PC3:Air care products—Air care, instant action (aerosol sprays)**

### **OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 4 times day of use[ConsOC4]; for each use event, covers use amounts up to 0.1g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.25hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC3:Air care products—Air care, instant action (aerosol sprays)-pesticidal- excipient only**

### **OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 4 times day of use[ConsOC4]; for each use event, covers use amounts up to 0.5g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.25hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC3:Air care products—Air care, continuous action (solid and liquid)**

### **OC**

Unless otherwise stated, covers concentrations up to 10% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.70 cm<sup>2</sup> [ConsOC5] for each use event, covers use amounts up to 0.48g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 8.00hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC3:Air care products—Air care, continuous action (solid and liquid)-pesticidal- excipient only**

### **OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.70 cm<sup>2</sup> [ConsOC5] for each use event, covers use amounts up to 0.48g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 8.00hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC4\_n:Anti-freeze and de-icing products--Washing car window**

### **OC**

Unless otherwise stated, covers concentrations up to 1% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; for each use event, covers use amounts up to 0.5g [ConsOC2]; Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation [ConsOC10]; covers use in room size of 34m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.02hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC4\_n:Anti-freeze and de-icing products--Pouring into radiator**

### **OC**

Unless otherwise stated, covers concentrations up to 10% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.00 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 2000g [ConsOC2]; Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation [ConsOC10]; covers use in room size of 34m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC4\_n:Anti-freeze and de-icing products--Lock de-icer**

# Annex to the extended Safety Data Sheet



Substance: Iparzol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 37 of 41

Revision date: 24.11.2014

## **OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 214.40 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 4g [ConsOC2]; Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation [ConsOC10]; covers use in room size of 34m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.25hr/event[ConsOC14];

## **RMM**

No specific RMMs identified beyond those OCs stated

## **PC8\_n: Biocidal products (excipient use only for solvent products)--Laundry and dish washing products**

### **OC**

Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 15g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.50hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC8\_n: Biocidal products (excipient use only for solvent products)--Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners )**

### **OC**

Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 128 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 27g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC8\_n: Biocidal products (excipient use only for solvent products)--Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)**

### **OC**

Unless otherwise stated, covers concentrations up to 15% [ConsOC1]; covers use up to 128 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.00 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 35g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC9a:Coatings and paints, fillers putties, thinners--Waterborne latex wall paint**

### **OC**

Unless otherwise stated, covers concentrations up to 1.5% [ConsOC1]; covers use up to 4 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 2760g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 2.20hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC9a:Coatings and paints, fillers putties, thinners--Solvent rich, high solid, water borne paint**

### **OC**

Unless otherwise stated, covers concentrations up to 27.5% [ConsOC1]; covers use up to 6 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 744g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 2.20hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 38 of 41

Revision date: 24.11.2014

## **PC9a:Coatings and paints, fillers putties, thinners--Aerosol spray can**

### **OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 2 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; for each use event, covers use amounts up to 215g [ConsOC2]; Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation [ConsOC10]; covers use in room size of 34m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC9a:Coatings and paints, fillers putties, thinners--Removers (paint-, glue-, wall paper-, sealant-remover)**

### **OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 3 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 491g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 2.00hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC9b:Fillers, putties, plasters, modeling clay--Fillers and putty**

### **OC**

Unless otherwise stated, covers concentrations up to 2% [ConsOC1]; covers use up to 12 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.73 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 85g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 4.00hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC9b:Fillers, putties, plasters, modeling clay--Plasters and floor equalizers**

### **OC**

Unless otherwise stated, covers concentrations up to 2% [ConsOC1]; covers use up to 12 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 13800g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 2.00hr/event[ConsOC14];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC9b:Fillers, putties, plasters, modeling clay--Modelling clay**

### **OC**

Unless otherwise stated, covers concentrations up to 1% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 254.40 cm<sup>2</sup> [ConsOC5]; for each use event, assumes swallowed amount of 1g [ConsOC13];

### **RMM**

No specific RMMs identified beyond those OCs stated

## **PC9c:Finger paints --Finger paints**

### **OC**

Unless otherwise stated, covers concentrations up to 50[ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 254.40 cm<sup>2</sup> [ConsOC5]; for each use event, assumes swallowed amount of 1.35g [ConsOC13];

### **RMM**

Avoid using at a product concentration greater than 5% [ConsRMM1]

## **PC24: Lubricants, greases, and release products—Liquids**

### **OC**

Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 4 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 468.00 cm<sup>2</sup> [ConsOC5]; for each use

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 39 of 41

Revision date: 24.11.2014

event, covers use amounts up to 2200g [ConsOC2]; Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation [ConsOC10]; covers use in room size of 34m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];

**RMM**

No specific RMMs identified beyond those OCs stated

**PC24: Lubricants, greases, and release products—Pastes**

**OC**

Unless otherwise stated, covers concentrations up to 20% [ConsOC1]; covers use up to 10 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 468.00 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 34g [ConsOC2];

**RMM**

No specific RMMs identified beyond those OCs stated

**PC24: Lubricants, greases, and release products—Sprays**

**OC**

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 6 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 73g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];

**RMM**

No specific RMMs identified beyond those OCs stated

**PC35: Washing and cleaning products (including solvent based products)—Laundry and dish washing products**

**OC**

Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 6 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 15g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.50hr/event[ConsOC14];

**RMM**

No specific RMMs identified beyond those OCs stated

**PC35: Washing and cleaning products (including solvent based products)—Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, metal cleaners)**

**OC**

Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 128 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 27g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];

**RMM**

No specific RMMs identified beyond those OCs stated

**PC35: Washing and cleaning products (including solvent based products)—Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)**

**OC**

Unless otherwise stated, covers concentrations up to 15% [ConsOC1]; covers use up to 128 days/year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.00 cm<sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 35g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup>[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];

**RMM**

No specific RMMs identified beyond those OCs stated

**PC38\_n: Welding and soldering products, flux products—NOTE, n\_assessment not in TRA**

**OC**

# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 40 of 41

Revision date: 24.11.2014

Unless otherwise stated, covers concentrations up to 20% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; for each use event, covers use amounts up to 12g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m<sup>3</sup> [ConsOC11]; for each use event, covers exposure up to 1.00hr/event [ConsOC14];

## **RMM**

No specific RMMs identified beyond those OCs stated

## **Section 2.2 Control of environmental exposure**

### **Product characteristics:**

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

### **Amounts used**

Maximum daily site tonnage (kg/day): 0.014

### **Frequency and duration of use**

Emission days (days/year): 365

### **Environmental factors not influenced by risk management**

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

### **Other given operational conditions affecting environmental exposure**

Release fraction to air from process (initial release prior to RMM): 0.95

Release fraction to wastewater from process (initial release prior to RMM): 0.025

Release fraction to soil from process (initial release prior to RMM): 0.025

### **Conditions and measures related to municipal sewage treatment plant**

Estimated substance removal from wastewater via domestic sewage treatment (%): 96.2

Maximum allowable site tonnage ( $M_{Safe}$ ) based on release following total wastewater treatment removal (kg/day): 1700

Assumed domestic sewage treatment plant flow (m<sup>3</sup>/day): 2000

### **Conditions and measures related to external treatment of waste for disposal**

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

### **Conditions and measures related to external recovery of waste**

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## **Section 3 Exposure estimation**

### Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## **Section 4 Guidance to check compliance with the Exposure Scenario**

### Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].



# Annex to the extended Safety Data Sheet



Substance: Iparsol 90 (iso-Heptane)  
EC No.: 250-610-8  
Page 41 of 41

Revision date: 24.11.2014

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Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

## Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).