# IROGRAN® A 85 P 4394 UV HR PB

| Version | Revision Date: | SDS Number: | Date of last issue: - |
|---|---|---|---|
| 1.0 | 05/25/2017 | 400000005733 | Date of first issue: 05/25/2017 |

## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : IROGRAN® A 85 P 4394 UV HR PB

**Manufacturer or supplier's details**

Company name of supplier : Huntsman Polyurethanes
Address : P.O. Box 4980
The Woodlands,
TX 77387
United States of America (USA)
Telephone : Tech Info:(800) 257-5547

E-mail address of person responsible for the SDS : MSDS@huntsman.com

Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887

**Recommended use of the chemical and restrictions on use**

Recommended use : Component of a Polyurethane System.

## SECTION 2. HAZARDS IDENTIFICATION

**GHS Classification**

Specific target organ toxicity - repeated exposure (Oral) : Category 2 (Kidney)

Acute aquatic toxicity : Category 3

**GHS label elements**

Hazard pictograms :

Signal word : Warning

Hazard statements : H373 May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.
H402 Harmful to aquatic life.

Precautionary statements : **Prevention:**
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P273 Avoid release to the environment.
**Response:**
P314 Get medical advice/ attention if you feel unwell.
**Storage:**
Not available
**Disposal:**
P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international

regulations.

**Other hazards**

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

**Hazardous components**

| Chemical name | CAS-No. | Concentration (% w/w) |
|---|---|---|
| Poly(oxy-1,4-butanediyl), .alpha.-hydro-.omega.-hydroxy- | 25190-06-1 | 60 - 100 |
| butane-1,4-diol | 110-63-4 | 7 - 13 |

## SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : Wash with water and soap as a precaution.

In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

Most important symptoms and effects, both acute and delayed : None known.

## SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : High volume water jet

| | | |
|---|---|---|
| Specific hazards during firefighting | : | Do not allow run-off from fire fighting to enter drains or water courses. |
| Hazardous combustion products | : | No hazardous combustion products are known |
| Specific extinguishing methods | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for firefighters | : | Wear self-contained breathing apparatus for firefighting if necessary. |

## SECTION 6. ACCIDENTAL RELEASE MEASURES

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment. |
| Environmental precautions | : | Prevent product from entering drains.<br>Prevent further leakage or spillage if safe to do so.<br>If the product contaminates rivers and lakes or drains inform respective authorities. |
| Methods and materials for containment and cleaning up | : | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).<br>Keep in suitable, closed containers for disposal. |

## SECTION 7. HANDLING AND STORAGE

| | | |
|---|---|---|
| Advice on protection against fire and explosion | : | Normal measures for preventive fire protection. |
| Advice on safe handling | : | Do not breathe vapours/dust.<br>For personal protection see section 8.<br>Smoking, eating and drinking should be prohibited in the application area.<br>Dispose of rinse water in accordance with local and national regulations. |
| Hygiene measures | : | Wash hands before breaks and at the end of workday. |
| Conditions for safe storage | : | Keep container tightly closed in a dry and well-ventilated place.<br>Containers which are opened must be carefully resealed and kept upright to prevent leakage.<br>Electrical installations / working materials must comply with the technological safety standards. |
| Materials to avoid | : | No materials to be especially mentioned. |
| Recommended storage temperature | : | 5 - 48 °C |

Storage period : 24 Months

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

**Personal protective equipment**

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines

Filter type : Organic vapour type

Hand protection
Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| Appearance | : | liquid |
| Colour | : | No data is available on the product itself. |
| Odour | : | No data is available on the product itself. |
| Odour Threshold | : | No data is available on the product itself. |
| pH | : | No data is available on the product itself. |
| Freezing point | : | No data is available on the product itself. |
| Melting point | | No data is available on the product itself. |
| Boiling point | | No data is available on the product itself. |
| Flash point | : | > 93.33 °C |
| Evaporation rate | : | No data is available on the product itself. |
| Flammability (solid, gas) | : | No data is available on the product itself. |
| Flammability (liquids) | : | No data is available on the product itself. |
| Upper explosion limit | : | No data is available on the product itself. |

| | | |
|---|---|---|
| Lower explosion limit | : | No data is available on the product itself. |
| Vapour pressure | : | No data is available on the product itself. |
| Relative vapour density | : | No data is available on the product itself. |
| Relative density | : | No data is available on the product itself. |
| Density | : | No data is available on the product itself. |
| Solubility(ies) | | |
| Water solubility | : | No data is available on the product itself. |
| Solubility in other solvents | : | No data is available on the product itself. |
| Partition coefficient: n-octanol/water | : | No data is available on the product itself. |
| Auto-ignition temperature | : | No data is available on the product itself. |
| Thermal decomposition | : | No data is available on the product itself. |
| Self-Accelerating decomposition temperature (SADT) | : | No data is available on the product itself. |
| Viscosity | : | No data is available on the product itself. |
| Explosive properties | : | No data is available on the product itself. |
| Oxidizing properties | : | No data is available on the product itself. |
| Particle size | : | No data is available on the product itself. |

## SECTION 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |
| Chemical stability | : | Stable under normal conditions. |
| Possibility of hazardous reactions | : | No hazards to be specially mentioned. |
| Conditions to avoid | : | None known. |
| Incompatible materials | : | None known. |

## SECTION 11. TOXICOLOGICAL INFORMATION

| | | |
|---|---|---|
| Information on likely routes of exposure | : | No data is available on the product itself. |

**Acute toxicity**

| | | |
|---|---|---|
| Acute oral toxicity - Product | : | Acute toxicity estimate : > 5,000 mg/kg<br>Method: Calculation method |

**Components:**

butane-1,4-diol**:**

Acute inhalation toxicity : LC50 (Rat, male): > 15 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Acute Inhalation Toxicity: Fixed Concentration Procedure
Assessment: The substance or mixture has no acute inhalation toxicity

**Components:**

butane-1,4-diol**:**

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Acute toxicity (other routes of administration) : No data available

**Skin corrosion/irritation**

**Components:**

butane-1,4-diol**:**
Species: Rabbit
Assessment: No skin irritation
Result: No skin irritation

**Serious eye damage/eye irritation**

**Components:**

butane-1,4-diol**:**
Species: Rabbit
Result: No eye irritation
Assessment: No eye irritation

**Respiratory or skin sensitisation**

**Components:**

Poly(oxy-1,4-butanediyl), .alpha.-hydro-.omega.-hydroxy-**:**
Result: Does not cause skin sensitisation.

butane-1,4-diol**:**
Exposure routes: Skin
Species: Guinea pig
Result: Does not cause skin sensitisation.

Assessment: No data available

**Germ cell mutagenicity**

**Components:**

butane-1,4-diol**:**

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo : No data available

**Carcinogenicity**

**Components:**

butane-1,4-diol**:**
Species: Rat, (female)
Application Route: Oral
Exposure time: 103 weeks
Dose: 225 mg/kg
Frequency of Treatment: 5 daily
Result: negative

Carcinogenicity - Assessment : No data available

**Reproductive toxicity**

**Components:**

butane-1,4-diol**:**
Effects on fertility : Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 422

**Components:**

butane-1,4-diol**:**
Effects on foetal development : Species: Rat
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level: 500 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Species: Rat
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level: 800 mg/kg body weight
Method: OECD Test Guideline 422
Result: No teratogenic effects

Reproductive toxicity - Assessment : No data available

**STOT - single exposure**

**Components:**

butane-1,4-diol**:**
Exposure routes: Ingestion
Target Organs: Narcotic effects
Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

**STOT - repeated exposure**

**Components:**

butane-1,4-diol**:**
Exposure routes: Ingestion
Target Organs: Kidney
Assessment: May cause damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity**

**Components:**

butane-1,4-diol**:**
Species: Rat, male
: 1100 mg/m3
Test atmosphere: dust/mist
Exposure time: 2 Weeks
Number of exposures: 6 h
Method: OECD Test Guideline 412

Species: Rat, male
NOAEL: 225 mg/kg
Application Route: Ingestion
Exposure time: 13 Weeks
Number of exposures: 5 d
Method: Subchronic toxicity

Repeated dose toxicity - Assessment : No data available

**Aspiration toxicity**

No data available

**Experience with human exposure**

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

**Toxicology, Metabolism, Distribution**

No data available

**Neurological effects**

No data available

**Further information**

Ingestion: No data available

## SECTION 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

**Components:**

butane-1,4-diol**:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 30,000 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

**Components:**

Poly(oxy-1,4-butanediyl), .alpha.-hydro-.omega.-hydroxy-**:**

Toxicity to daphnia and other aquatic invertebrates : EC50: 316 mg/l
Exposure time: 48 h

butane-1,4-diol**:**

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 813 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

**Components:**

Poly(oxy-1,4-butanediyl), .alpha.-hydro-.omega.-hydroxy-**:**

Toxicity to algae : EC50 (Other): 83.5 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

butane-1,4-diol**:**

Toxicity to algae : ErC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): > 500 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water

Method: DIN 38412

M-Factor (Acute aquatic toxicity) : No data available

Toxicity to fish (Chronic toxicity) : No data available

**Components:**

butane-1,4-diol**:**

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): > 85 mg/l
Exposure time: 21 d
Test substance: Fresh water
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : No data available

Toxicity to microorganisms : No data available

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment

Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

**Persistence and degradability**

**Components:**

Poly(oxy-1,4-butanediyl), .alpha.-hydro-.omega.-hydroxy-**:**

Biodegradability : Result: Readily biodegradable.

butane-1,4-diol**:**

Biodegradability : Inoculum: activated sludge
Concentration: 100 mg/l
Result: Readily biodegradable.
Biodegradation: 93 - 96 %
Exposure time: 14 d
Method: OECD Test Guideline 301C

**Components:**

butane-1,4-diol:

| | | |
|---|---|---|
| Biochemical Oxygen Demand (BOD) | : | 102 mg/g<br>Incubation time: 5 d |

**Components:**

butane-1,4-diol:

| | | |
|---|---|---|
| Chemical Oxygen Demand (COD) | : | 1,892 mg/g |
| BOD/COD | : | No data available |
| ThOD | : | No data available |
| BOD/ThOD | : | No data available |
| Dissolved organic carbon (DOC) | : | No data available |
| Physico-chemical removability | : | No data available |
| Stability in water | : | No data available |

**Components:**

butane-1,4-diol:

| | | |
|---|---|---|
| Photodegradation | : | Test Type: Air<br>Rate constant: < .00001 |
| Impact on Sewage Treatment | : | No data available |

**Bioaccumulative potential**

**Components:**

butane-1,4-diol:

| | | |
|---|---|---|
| Bioaccumulation | : | Bioconcentration factor (BCF): 3.16<br>Remarks: Bioaccumulation is unlikely.<br><br>Species: Fish<br>Bioconcentration factor (BCF): 3.16<br>Test substance: Fresh water |

**Components:**

butane-1,4-diol:

| | | |
|---|---|---|
| Partition coefficient: n-octanol/water | : | log Pow: -0.88 (25 °C)<br>Method: OECD Test Guideline 107 |

**Mobility in soil**

| | | |
|---|---|---|
| Mobility | : | No data available |

**Components:**

butane-1,4-diol**:**

| | | |
|---|---|---|
| Distribution among environmental compartments | : | Koc: 0.41 - 1 |
| Stability in soil | : | No data available |

**Other adverse effects**

| | | |
|---|---|---|
| Environmental fate and pathways | : | No data available |
| Results of PBT and vPvB assessment | : | No data available |
| Endocrine disrupting potential | : | No data available |
| Adsorbed organic bound halogens (AOX) | : | No data available |

**Hazardous to the ozone layer**

| | |
|---|---|
| Ozone-Depletion Potential | Not applicable |

| | | |
|---|---|---|
| Additional ecological information - Product | : | An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.<br>Harmful to aquatic life. |
| Global warming potential (GWP) | : | No data available |

## SECTION 13. DISPOSAL CONSIDERATIONS

**Disposal methods**

| | | |
|---|---|---|
| Waste from residues | : | The product should not be allowed to enter drains, water courses or the soil.<br>Do not contaminate ponds, waterways or ditches with chemical or used container.<br>Send to a licensed waste management company. |
| Contaminated packaging | : | Empty remaining contents.<br>Dispose of as unused product.<br>Do not re-use empty containers. |

## SECTION 14. TRANSPORT INFORMATION

**International Regulations**

**IATA**
Not regulated as dangerous goods

**IMDG**
Not regulated as dangerous goods

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable for product as supplied.

**National Regulations**

**NOM-002-SCT**
Not regulated as dangerous goods

**Special precautions for user**

| | | |
|---|---|---|
| Remarks | : | Not classified as dangerous in the meaning of transport regulations. |

## SECTION 15. REGULATORY INFORMATION

**The components of this product are reported in the following inventories:**

| | | |
|---|---|---|
| CH INV | : | The formulation contains substances listed on the Swiss Inventory, Low volume exemption, On the inventory, or in compliance with the inventory |
| DSL | : | All components of this product are on the Canadian DSL |
| AICS | : | On the inventory, or in compliance with the inventory |
| NZIoC | : | Not in compliance with the inventory |
| ENCS | : | On the inventory, or in compliance with the inventory |
| KECI | : | On the inventory, or in compliance with the inventory |
| PICCS | : | Not in compliance with the inventory |
| IECSC | : | On the inventory, or in compliance with the inventory |
| TCSI | : | On the inventory, or in compliance with the inventory |
| TSCA | : | On the inventory, or in compliance with the inventory |

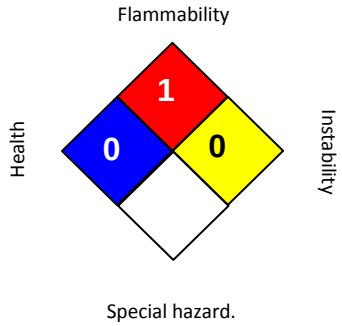
**Inventories**

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

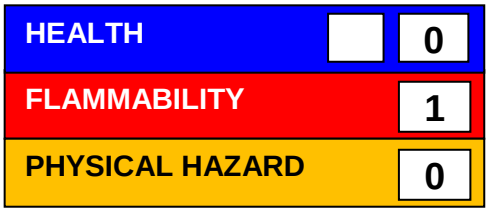
## SECTION 16. OTHER INFORMATION

### Further information

**NFPA:**




**HMIS® IV:**




HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

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THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.



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