

SAFETY DATA SHEET

Product:

GARBEFLEX DOP R

Page: 1/6

SDS No. : 02009

Version : 5

Date : 2004-01-15
Cancel and replace: 2001-09-21

01 - IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING (*)

NAME OF THE SUBSTANCE (*) : GARBEFLEX DOP R (*)
RECOMMENDED USES : Plasticizer for polymers (Poly(vinyl chloride))
SDS No : 02009
SUPPLIER : Arkema France
ACRYLIQUES
420 rue d'Estienne d'Orves
92705 COLOMBES CEDEX
FRANCE
Tel : 33 1 49 00 80 80
Fax : 33 1 49 00 83 96
Emergency telephone number : 44 1865 407 333

02 - HAZARDS IDENTIFICATION

MOST IMPORTANT HAZARDS : -
HEALTH EFFECTS : May impair fertility
May cause harm to the unborn child
Inhalation of vapours from heated product :
Irritating to eyes, respiratory system and skin
PHYSICAL AND CHEMICAL HAZARDS : Thermal decomposition giving flammable and toxic products
SPECIFIC HAZARDS / EC : TOXIC
May impair fertility
May cause harm to the unborn child

03 - COMPOSITION / INFORMATION ON INGREDIENTS (*)

CHEMICAL NAME OF THE SUBSTANCE (*) : DI(2-ETHYLHEXYL) PHTHALATE
T, R60-61 (*)
Synonyms : DIOCTYL PHTHALATE
CAS : 117-81-7
EINECS : 204-211-0

04 - FIRST AID MEASURES

GENERAL ADVICE : Take off immediately all contaminated clothing
INHALATION : Inhalation of vapours from heated product :
Move to fresh air
Oxygen or artificial respiration if needed
In case of persistent problems :
Consult a doctor
SKIN CONTACT : Wash immediately and abundantly with soap and water
EYE CONTACT : Wash immediately, abundantly and thoroughly with water
If irritation persists, consult an ophthalmologist
INGESTION : In case of problems, consult a doctor

SAFETY DATA SHEET**Product:****GARBEFLEX DOP R**

Page: 2/6

SDS No. : 02009

Version : 5

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Cancel and replace: 2001-09-21**05 - FIRE-FIGHTING MEASURES**

SUITABLE EXTINGUISHING MEDIA : Dry powder
Carbon dioxide (CO2)
Foam

SPECIFIC HAZARDS : Thermal decomposition giving flammable and toxic products :
Hydrocarbons
Aldehydes
Ketones
(Phthalic anhydride)

SPECIFIC METHODS : Cool containers / tanks with water spray

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS :
In case of fire, wear a self-contained breathing apparatus

06 - ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTION : Avoid contact with skin and eyes and inhalation of vapours

ENVIRONMENTAL PROTECTION : Do not release into the environment
Do not let the product enter into drains
Contain by damming

METHODS FOR CLEANING UP : -

Recovery : Pump into an inert labelled emergency container
Absorb the remainder with an inert absorbent material :
Sand
Sawdust

Disposal : Destroy the product by incineration at an approved waste disposal site

07 - HANDLING AND STORAGE

HANDLING : -

Technical measures/Precautions : Storage and handling precautions applicable to products :
LIQUID
TOXIC
WITH IRRITATING VAPOURS (when hot)
Ensure appropriate exhaust and ventilation at machinery
Provide showers, eye-baths

STORAGE : -

Technical measures/Storage conditions : Keep container tightly closed
Provide a catch-tank in a bunded area
Provide electrical earthing of equipment

Incompatible products : Oxidizing agents

PACKAGING MATERIALS : -

Recommended : Metals

08 - EXPOSURE CONTROLS / PERSONAL PROTECTION (*)

PROTECTIVE PROVISIONS : Ensure sufficient air exchange and/or exhaust in work areas

CONTROL PARAMETERS (*) : -

SAFETY DATA SHEET**Product:** **GARBEFLEX DOP R** Page: 3/6

SDS No. : 02009

Version : 5

Date : 2004-01-15
Cancel and replace: 2001-09-21

Exposure limits (*) :	FRANCE 1999 : VME= 5 mg/m ³ USA-ACGIH 2003 : TLV-TWA = 5 mg/m ³ (*)
PERSONAL PROTECTION EQUIPMENT (*) :	-
Hand protection (*) :	Gloves: (*) Splash contact, intermittent and prolonged (*) Material: PolyVinyl Chloride (*) Surface thickness 1.1 mm (*) According to permeation index NF EN 374: 3 (time elapsed > 60 mins) (*)
Eye protection :	Safety glasses
Skin and body protection (*) :	At the workplace: (*) Protective clothing (cotton) (*) Safety shoes (*) Intervention at incident: (*) waterproof suit (*) Boots (PVC) (*)
Specific hygiene measures :	Avoid contact with skin and eyes and inhalation of vapours

09 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE (20°C) :	Liquid
COLOUR :	Colourless
ODOUR :	None
BOILING POINT/RANGE :	At 1013 hPa (mbar) : 386 °C
MELTING POINT/RANGE :	-46 °C
DECOMPOSITION TEMPERATURE :	200 °C (approximately)
FLASH POINT :	Open cup : 218 °C Standard : NF T 60 118 (ISO 2592)
VAPOUR PRESSURE :	(20 °C) : 10EXP(-8) hPa (mbar) (25 °C) : 4.53 x10EXP(-7) hPa (mbar) (200 °C) : 1.7 hPa (mbar)
DENSITY :	Liquid : (20 °C) : 984 kg/m ³
SPECIFIC GRAVITY (water = 1) :	(liquid) (20°C) : 0.984
SOLUBILITY :	-
WATER :	(20°C) : 0.2 g/l
Solvents :	Soluble in : ACETONE CYCLOHEXANE Alcohols
PARTITION COEFFICIENT (n-octanol/water) :	log Pow = 8
OTHER DATA :	Molecular mass : 390.57 Viscosity (20 °C) : 81 mPa.s (cP)

10 - STABILITY AND REACTIVITY

MATERIALS TO AVOID : Oxidizing agents

SAFETY DATA SHEET

Product:

GARBEFLEX DOP R

Page: 4/6

SDS No. : 02009

Version : 5

Date : 2004-01-15
Cancel and replace: 2001-09-21

HAZARDOUS DECOMPOSITION PRODUCTS : Thermal decomposition giving flammable and toxic products :
Hydrocarbons
Aldehydes
Ketones
(Phthalic anhydride)

FURTHER INFORMATION : The product is stable at ambient temperature

11 - TOXICOLOGICAL INFORMATION

ACUTE TOXICITY : Reported in animals :

Inhalation : Practically not harmful by inhalation
No mortality in rat at 10.6 mg/l (for 4 h)

Ingestion : Practically not harmful if swallowed
LD50/oral/rat > 30 g/kg

Skin-contact : Practically not harmful in contact with skin
LD50/dermal/rabbit = 25 g/kg

LOCAL EFFECTS : -

Inhalation : Possible irritation of respiratory system (in case of exposure to vapour/fog of the heated product)

Skin-contact : Possible irritation of skin (in case of exposure to vapour/fog of the heated product)
Reported in animals :
Slightly or not irritating to skin (rabbit)

Eye-contact : Possible irritation of eyes (in case of exposure to vapour/fog of the heated product)
Reported in animals :
Slightly or not irritating to eyes (rabbit)

SENSITIZATION : -

Skin-contact : No reported cases of cutaneous sensitization in man
In animals :
(guinea-pig)
Not a skin sensitizer

CHRONIC TOXICITY : Oral route :
Target organs at high doses
Liver, kidney
(rat, mouse)
No effect maximum dose : 29 mg/kg/d (mouse, 2 year(s))
No specific toxic effect in primates :
2500 mg/kg/d (3 month(s))
Inhalation :
Target organs at high concentrations : respiratory system (Irritation.)
Maximum concentration with no effect : 0.05 - 1 mg/l/ rat (1 month(s))

SAFETY DATA SHEET

Product:

GARBIFLEX DOP R

Page: 5/6

SDS No. : 02009

Version : 5

Date : 2004-01-15
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SPECIFIC EFFECTS :

GENOTOXICITY :

Available experimental data indicates no particular problems for man
Overall inactive in 'in vivo' and 'in vitro' tests

CARCINOGENICITY :

Available experimental data indicates no particular problems for man
The tumour-inducing effects on the liver observed at high doses in rats and mice are specific to these animal species and are considered as unsuitable for extrapolation to man

REPRODUCTIVE TOXICITY :

Experimental effect have been observed in animals at much higher doses than those which people come into contact with during normal use conditions

Foetal development :

At high doses toxic effects on foetal development in rodents

No effect dose : 44 mg/kg (mouse, oral route)

Fertility :

At high doses, toxic effects to the male reproductive system in rodents

No effect dose : 110 mg/kg (rat)

(oral route)

Absence of toxic effects upon the reproductive system. (Primates)

At 2500 mg/kg/d (3 month(s), oral route)

12 - ECOLOGICAL INFORMATION (*)

MOBILITY (*) :

In aqueous environment : (*)

Very slight evaporation : t1/2 life = 15y

In soils and sediments : (*)

Strong adsorption : log Koc = 4-5 (*)

PERSISTENCE/DEGRADABILITY :

-

In water :

Very slowly hydrolysable : t1/2 life = 2000y (pH = 7)

Photolysis : t1/2 life = 143d

Readily biodegradable : 82 % after 28 d

Inherently biodegradable

In air :

Degradation by radicals OH : t1/2 life = 8.8 h (estimated)

In soils and sediments :

Moderately biodegradable in sediments : 41% after 30d

Not biodegradable under anaerobic conditions

BIOACCUMULATION (*) :

log Pow = 4.88 (*)

Fish : bioconcentration factor (BCF) = 280 (average) (*)

Crustaceans: Bioconcentration factor (BCF) = 1164 (average)

Algae : bioconcentration factor (BCF) = 3173 (average) (*)

ECOTOXICITY :

-

AQUATIC TOXICITY :

-

Acute toxicity :

Fish : > Solubility in water

Daphnia : > Solubility in water

Algae : > Solubility in water

13 - DISPOSAL CONSIDERATIONS (*)

DISPOSAL OF PRODUCT (*) :

Destroy the product by incineration at an approved waste disposal site
(in accordance with local and national regulations) (*)

14 - TRANSPORT INFORMATION (*)

Technical consignment name : (*)

See Section : 2 (*)

ADR/RID :

Not regulated

SAFETY DATA SHEET

Product: **GARBEFLEX DOP R** Page: 6/6
SDS No. : 02009 Version : 5 Date : 2004-01-15
Cancel and replace: 2001-09-21

ADN/ADNR (*) : Not regulated (*)
IMDG : Not regulated
IATA : Not regulated
Consult ARKEMA's safety department for any further information

15 - REGULATORY INFORMATION (*)

EEC DIRECTIVE : -
SAFETY DATA SHEETS : D. 91/155/EEC amended by D.93/112/EEC and D. 2001/58/CE: Dangerous substances and preparations
EC CLASSIFICATION / LABELLING : -
HAZARDOUS SUBSTANCES : D. 67/548/EEC amended by D. 2001/59/EC (28th APT)
T _ TOXIC
R60 _ May impair fertility
R61 _ May cause harm to the unborn child
S45 _ In case of accident or if you feel unwell, seek medical advice immediately (show the label when possible)
S53 _ Avoid exposure - obtain special instructions before use
Restricted to professional users
Nr in ANNEX : 607-317-00-9
EC Nr (EINECS) : 204-211-0
INVENTORIES (*) : EINECS (EU) : 204-211-0 (*)
TSCA (USA) : listed
DSL (Canada) : listed
AICS (Australia) : listed
ENCS (Japan) : 3-1307
ECL (Korea) : KE-02196
PICCS (The Philippines) : listed (*)

16 - OTHER INFORMATION

RESTRICTIONS ON USE : Restricted to professional users
BIBLIOGRAPHY REFERENCES : Fiche toxicologique INRS : N° 161 : Phtalate de di(2-éthylhexyle)
FURTHER INFORMATION : WHEN USED IN FORMULATIONS, CONTACT US FOR LABELLING

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This information applies to the PRODUCT AS SUCH and conforming to specifications of ARKEMA
In case of formulations or mixtures, it is necessary to ascertain that a new danger will not appear
The information contained is based on our knowledge of the product, at the date of publishing and it is given quite sincerely. However the revision of some data is in progress
Users are advised of possible additional hazards when the product is used in applications for which it was not intended. This sheet shall only be used and reproduced for prevention and security purposes
The references to legislative, regulatory and codes of practice documents cannot be considered as exhaustive
It is the responsibility of the person receiving the product to refer to the totality of the official documents concerning the use, the possession and the handling of the product
It is also the responsibility of the handlers of the product to pass on to any subsequent persons who will come into contact with the product (usage, storage, cleaning of containers, other processes)
the totality of the information contained within this safety data sheet and necessary for safety at work, the protection of health and the protection of environment
The (*) indicate the changes made with respect to the previous version

End of document.
Number of page(s): 6

SAFETY DATA SHEET No 6

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND COMPANY / UNDERTAKING

- 1.1 Product Description: hyvin® PVC compounds in Granule Form
- 1.2 Company: INEOS Compounds.,
Aycliffe Industrial Estate,
Newton Aycliffe,
Co Durham,
England.
DL5 6EA
- 1.3 Telephone No: (01325) 300555
Fax No: (01325) 300215
e-mail: msds.ayc@ineos.com

2. HAZARDS IDENTIFICATION

Whilst this preparation contains hazardous ingredients, harmful effects are unlikely in conditions of normal use.

Incorrect processing may lead to thermal decomposition which will evolve toxic and corrosive vapours.

This PVC preparation has been classified under the Chemicals (Hazard Information and Packaging) regulations, *CHIP 3, UK Statutory Instrument 2002 No.1689*)

Classification: Toxic to reproduction, Category 2

Symbol: T

Risk phases: R60, R61

Safety phases: S35, S45, S53, S61

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Index No.	W/W %	Hazard Symbol	Risk Phrase
Di-2-Ethylhexyl Phthalate	Cas No. 117-81-7	>0.50% <50%	T	R60, R61
<i>EINECS-No 204-211-0</i>				

4. FIRST AID MEASURES

Inhalation

INEOS Compounds

Inhalation of Noxious Fumes:

Remove patient to fresh air, keep warm and at rest. Obtain immediate medical attention.

Apply artificial respiration if breathing has ceased or shows signs of failing.

Administer oxygen if necessary.

Skin Contact

Burns from Contact with Hot Melts:

Cool the affected parts with clean cold water.

Do not attempt to remove solidified plastic from the skin.

Obtain immediate medical attention.

Eye Contact

Irrigate with eyewash solution or clean water holding the eyelids apart.

Ingestion Do not induce vomiting.

Wash out mouth with water and give 200-300 ml (half a pint) of water.

Obtain medical attention if ill effects occur.

Medical Information

Fully inform doctor or hospital of the nature of the product being handled.

5. FIRE FIGHTING MEASURES

Remove uninvolved people from the vicinity of the fire.

Extinguishing Media

Dry powder, water mist, foam, carbon dioxide.

Check for special circumstances. e.g. Live electrical equipment that may affect the choice of extinguisher.

Protective Equipment

In major fire situations, toxic and corrosive vapours will be evolved and self contained breathing apparatus and acid resistant protective clothing should be worn.

6. ACCIDENTAL RELEASE MEASURES

Sweep or vacuum up. Store in a suitable closed container for disposal.

7. HANDLING AND STORAGE

Handling Solid granules can present a slipping hazard if spilled.

Processing Provide adequate ventilation.

Avoid inhalation of vapours from hot molten material.

Storage Store at room temperature in a dry, adequately ventilated area.

Keep packaging closed if possible.

Keep away from heat and sources of ignition.

INEOS Compounds

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Personal Protection Observe good industrial hygiene.

Wear suitable industrial protective clothing. Appropriate eye protection and gloves should be available whenever PVC preparations are being processed.

Exposure Controls When processing the material, provide good general ventilation and preferably local extraction near large areas of exposed molten material.

OES DEHP - $5\text{mg}/\text{m}^3$ (8 hr TWA). Suppliers data.

Decomposition Products

OES Hydrogen Chloride - STEL 5ppm; $7\text{mg}/\text{m}^3$ (15 mins. TWA).

OES Carbon Monoxide - STEL 300ppm; $330\text{mg}/\text{m}^3$ (15 mins. TWA).

OES = Occupational Exposure Standard.

STEL = Short Term Exposure Limit.

TWA = Time Weighted Average.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form Granular solid.

Relative Density >1

Odour Slight characteristic.

Decomposition Temperature

Decomposition is dependent on both time and temperature but will occur increasingly rapidly if left standing above 150°C.

Solubility (Water)

Insoluble.

See Product Data Sheet for further information on properties and processing

10. STABILITY AND REACTIVITY

General Information

If stored and handled in accordance with standard practice this product is unlikely to cause any harmful effects.

Hazardous Decomposition Products

Thermal decomposition will evolve corrosive vapours of Hydrogen Chloride and toxic vapours of Carbon Monoxide. Other organic decomposition products and metal oxides will be evolved but will not normally present an additional hazard.

Reactivity

PVC Preparations are relatively inert but contact with strong oxidising agents and concentrated acids above 60°C should be avoided.

Avoid contact with acetal resins.

11. TOXICOLOGICAL INFORMATION

INEOS Compounds

This preparation contains Di-2-Ethylhexyl Phthalate (DEHP) which has been shown via ingestion studies on rodents to affect male fertility and foetus development. However, in this product DEHP is not freely available from the solid phase. Inhalation studies using DEHP vapour have not shown these effects.

12. ECOLOGICAL INFORMATION

PVC preparations in fully gelled form are considered to be ecologically benign. They are not readily decomposed by weathering or by micro organisms.

Water Pollution Class in Germany, (Wassergefährdungsklasse), WGK= 0 (Self classification). Generally not water endangering.

13. DISPOSAL CONSIDERATIONS

If possible recycle otherwise disposal should be in accordance with local, state or national legislation. Bury in an authorised landfill site or incinerate under approved controlled conditions.

Waste is categorised as M1 07 02 13 under EU directive 2000/532/EC

14. TRANSPORT CONSIDERATIONS

Not classified as hazardous for transport.

15. REGULATORY INFORMATION

EEC Classification.

This PVC preparation does not normally present a danger to human health by inhalation, ingestion or contact with the skin in the form in which it is supplied. Such preparations do not require a label under regulation 8 of CHIP 3. (UK Statutory Instrument 2002 No.1689)

16. OTHER INFORMATION

For reference purposes: the Risk and Safety Phrases for DEHP are:

Risk Phrases:

- R60 May impair fertility.*
R61 May cause harm to the unborn child.

Safety phrases:

- S35 This material and its container must be disposed of in a safe way*
S45 In the case of accident or if you feel unwell, seek medical advice immediately (show label where possible).
S53 Restricted to professional users - Attention - Avoid exposure -obtain special instructions before use.
S61 Avoid release to the environment. Refer to special instructions/safety data sheet

Compounds containing DOP (DEHP) shall not be used in toys and childcare articles intended to be placed in the mouth by children of less than three years of age (Commission decision: 2004/624/EC)

INEOS Compounds

This Safety Data Sheet was prepared in accordance with the CHIP Regulations 2002 (UK Statutory Instrument 2002 No. 1689)

The information contained in this Safety Data Sheet has been prepared in good faith by the Company and represents the Company's actual knowledge of the Product at the date of issue. The purpose of this information is solely to enable the User to take the necessary measures for the protection of health and safety at work. No warranty or guarantee is given or may be implied as to the properties, specifications or quality of the Product, or its use or application. (The User must satisfy itself as to the suitability or completeness of the information for its own use). It is the User's responsibility to observe national or local laws or regulations as to industrial safety; in no case can the Company accept any responsibility for the User's failure to observe such laws or regulations. Freedom from patent rights must not be assumed.

Revisions to text in BOLD type.

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