

2-Ethylhexanoic acid

10040

 Version / Revision
 5.01
 Revision Date
 25-Jan-2022

 Supersedes Version
 5.00\*\*\*
 Issuing date
 25-Jan-2022

SECTION 1: Identification of the substance / mixture and of the company /

#### 1.1. Product identifier

undertaking

Identification of the substance/preparation

2-Ethylhexanoic acid

**CAS-No** 149-57-5 **EC No.** 205-743-6

Registration number (REACh) 01-2119488942-23

1.2. Relevant identified uses of the substance or mixture and uses advised against

**Identified uses** Intermediate

Formulation

laboratory chemicals
Functional Fluids
Consumer uses

Uses advised against Consumer uses

To avoid exposure of consumers

1.3. Details of the supplier of the safety data sheet

Company/Undertaking

Identification

**OQ Chemicals GmbH** Rheinpromenade 4A D-40789 Monheim

Germany

Product Information Product Stewardship

FAX: +49 (0)208 693 2053 email: sc.psq@oq.com

1.4. Emergency telephone number

Emergency telephone number +44 (0) 1235 239 671 (UK)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

This substance is classified based on Directive 1272/2008/EC and its amendments (CLP Regulation)

Reproductive toxicity Category 2, H361d

**Additional information** 

For full text of Hazard- and EU Hazard-statements see SECTION 16.

#### 2.2. Label elements

Labelling according to Regulation 1272/2008/EC and its amendments (CLP Regulation).



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Hazard pictograms



Signal word Warning

Hazard statements H361d: Suspected of damaging the unborn child.

**Precautionary statements** P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and

understood.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P308 + P313: IF exposed or concerned: Get medical advice/ attention.

P405: Store locked up.

P501: Dispose of contents/container in accordance with local regulation.

#### 2.3. Other hazards

Components of the product may be absorbed into the body by inhalation, ingestion and through the skin

**PBT and vPvB assessment** This substance is not considered to be persistent, bioaccumulating nor toxic

(PBT), nor very persistent nor very bioaccumulating (vPvB)

## **SECTION 3: Composition / information on ingredients**

#### 3.1. Substances

Component	CAS-No	REACh-No	1272/2008/EC	Concentration (%)
2-Ethylhexanoic acid	149-57-5	01-2119488942-23	Repr. 2; H361d	> 99,50

For full text of Hazard- and EU Hazard-statements see SECTION 16.

## **SECTION 4: First aid measures**

## 4.1. Description of first aid measures

#### Inhalation

Keep at rest. Aerate with fresh air. When symptoms persist or in all cases of doubt seek medical advice.

#### Eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

#### Skin

Wash off immediately with soap and plenty of water. When symptoms persist or in all cases of doubt seek medical advice.

#### Ingestion

Call a physician immediately. Do not induce vomiting without medical advice.



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## 4.2. Most important symptoms and effects, both acute and delayed

#### **Main symptoms**

None known.

#### Special hazard

Lung irritation, Lung oedema, Kidney disorders, respiratory disorder.

## 4.3. Indication of any immediate medical attention and special treatment needed

#### **General advice**

Remove contaminated, soaked clothing immediately and dispose of safely. First aider needs to protect himself.

Treat symptomatically. If ingested, flush stomach and compensate acidosis.

## SECTION 5: Firefighting measures

## 5.1. Extinguishing media

## Suitable extinguishing media

foam, dry chemical, carbon dioxide (CO2), water spray

#### **Unsuitable Extinguishing Media**

Do not use a solid water stream as it may scatter and spread fire.

#### 5.2. Special hazards arising from the substance or mixture

Under conditions giving incomplete combustion, hazardous gases produced may consist of: carbon monoxide (CO)

carbon dioxide (CO2)

Combustion gases of organic materials must in principle be graded as inhalation poisons Vapours are heavier than air and may spread along floors

#### 5.3. Advice for firefighters

#### Special protective equipment for firefighters

Fire fighter protection should include a self-contained breathing apparatus (NIOSH-approved or EN 133) and full fire-fighting turn out gear.

#### **Precautions for firefighting**

Cool containers / tanks with water spray. Dike and collect water used to fight fire. Keep people away from and upwind of fire.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: For personal protective equipment see section 8. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep people away from and upwind of spill/leak. Ensure adequate ventilation, especially in confined areas. Keep away from heat and sources of ignition. For emergency responders: Personal protection see section 8.

#### 6.2. Environmental precautions



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Prevent further leakage or spillage. Do not discharge product into the aquatic environment without pretreatment (biological treatment plant).

## 6.3. Methods and material for containment and cleaning up

#### **Methods for containment**

Stop the flow of material, if possible without risk. Dike spilled material, where this is possible.

#### Methods for cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Dispose of in accordance with local regulations. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).

#### 6.4. Reference to other sections

For personal protective equipment see section 8.

## SECTION 7: Handling and storage

## 7.1. Precautions for safe handling

#### Advice on safe handling

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Provide sufficient air exchange and/or exhaust in work rooms.

#### Hygiene measures

When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

#### Advice on the protection of the environment

See Section 8: Environmental exposure controls.

#### Incompatible products

bases amines strong oxidizing agents

## 7.2. Conditions for safe storage, including any incompatibilities

#### Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). In case of fire, emergency cooling with water spray should be available. Ground and bond containers when transferring material.

#### **Technical measures/Storage conditions**

Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care. Recommended storage temperature: =< 38 °C / =< 100 °F.

## Temperature class

T2

### 7.3. Specific end use(s)

Intermediate Formulation



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laboratory chemicals Functional Fluids

## SECTION 8: Exposure controls / personal protection

## 8.1. Control parameters

## Exposure limits Egypt

No exposure limits established.

## **Exposure limits Israel**

#### **Israel OELs**

Component	TWA (mg/m³)	TWA (ppm)	STEL (mg/m³)	STEL (ppm)
2-Ethylhexanoic acid	5			
CAS: 149-57-5	Inhalable fraction			
	and vapor.			

## **Exposure limits South Africa**

No exposure limits established.

## **Exposure limits United Arab Emirates**

No exposure limits established.

## **Exposure limits Kuweit**

No exposure limits established.

#### Note

For details and further information please refer to the original regulation.

## **Occupational Exposure Controls**

## 8.2. Exposure controls

#### **Appropriate Engineering controls**

General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

## Personal protective equipment

#### General industrial hygiene practice

Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Ensure that eyewash stations and safety showers are close to the workstation location.



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#### Hygiene measures

When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

#### Eye protection

Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.

#### Hand protection

Wear protective gloves. Recommendations are listed below. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

Suitable material nitrile rubber

**Evaluation** according to EN 374: level 6

Glove thickness approx 0,55 mm

Break through time > 480 min

Suitable material polyvinylchloride

**Evaluation** Information derived from practical experience

Glove thickness approx 0.8 mm

#### Skin and body protection

Impervious clothing. Wear face-shield and protective suit for abnormal processing problems.

#### Respiratory protection

Respirator with filter for organic vapour. Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Equipment should conform to NIOSH, EN or other applicable national standards.

## **Environmental exposure controls**

Use product only in closed system. If leakage can not be prevented, the substance needs to be suck off at the emersion point, if possible without danger. Observe the exposure limits, clean exhaust air if needed. If recycling is not practicable, dispose of in compliance with local regulations. Inform the responsible authorities in case of leakage into the atmosphere, or of entry into waterways, soil or drains.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Appearance liquid colourless Odour mild

Odour threshold No data available

**pH** 3,75 (1 g/l in water @ 25 °C (77 °F)) DIN 19268

Melting point/range-83 °C (Pour point)Boiling point/range228 °C @ 1013 hPaFlash point116 °C @ 1013 hPa

Method closed cup, DIN EN ISO 2719\*\*\*

**Evaporation rate** No data available

Flammability (solid, gas) Does not apply, the substance is a liquid

**Lower explosion limit** 0,8 Vol % **Upper explosion limit** 6,7 Vol %

Vapour pressure

Values [hPa] Values [kPa] Values [atm] @ °C @ °F Method



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0,04 0,004 < 0,001 20 68 4,3 0,43 0,004 50 122

**Vapour density** 5,0 (Air = 1) @ 20 °C (68 °F)

Relative density

Values @ °C @ °F Method 0,9067 20 68 DIN 51757 Solubility 1,5 g/l @ 20 °C, in water, OECD 105 log Pow 2,7 @25 °C (77 °F), pH 4,7 OECD 107 3,0 @25°C (77 °F), pH 3,0 OECD 117\*\*\*

Autoignition temperature 395 °C @ 1014 hPa\*\*\*

Method DIN 51794

Decomposition temperature Viscosity 7,625 mPa\*s @ 20 °C dynamic, ASTM D445

Oxidizing properties Does not apply, substance is not oxidising. There are no chemical groups

associated with oxidizing properties

**Explosive properties**Does not apply, substance is not explosive. There are no chemical groups

associated with explosive properties

9.2. Other information

Molecular weight144,21Molecular formulaC8 H16 O2

**log Koc** ≤ 2,15 at ambient temperature OECD 106\*\*\* pKa 4,9 @ 21 °C (69 °F) OECD 112\*\*\*

Refractive index 1,425 @ 20 °C

**Surface tension** 43,2 mN/m @ 20 °C (68 °F), OECD 115\*\*\*

## SECTION 10: Stability and Reactivity

### 10.1. Reactivity

The reactivity of the product corresponds to the typical reactivity shown by the substance group as described in any text book on organic chemistry.

### 10.2. Chemical stability

Stable under recommended storage conditions.

#### 10.3. Possibility of hazardous reactions

Hazardous polymerisation does not occur.

#### 10.4. Conditions to avoid

Avoid contact with heat, sparks, open flame and static discharge. Avoid any source of ignition.

#### 10.5. Incompatible materials

bases, amines, strong oxidizing agents.

#### 10.6. Hazardous decomposition products



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No decomposition if stored and applied as directed.

## **SECTION 11: Toxicological information**

## 11.1. Information on toxicological effects

Likely routes of exposure Ingestion, Inhalation, Eye contact, Skin contact

Acute toxicity				
2-Ethylhexanoic acid (149-57-5)				
Routes of Exposure	Endpoint	Values	Species	Method
Oral	LD50	2043 mg/kg	rat, female	OECD 401
Dermal	LD50	> 2000 mg/kg	rat, male/female	OECD 402
Inhalative	LC0	0,11 mg/l (8 h)	rat, male/female***	OECD 403

#### 2-Ethylhexanoic acid, CAS: 149-57-5

#### **Assessment**

Based on available data, the classification criteria are not met for:

Acute oral toxicity Acute dermal toxicity Acute inhalation toxicity

Irritation and corrosion				
2-Ethylhexanoic acid (149-57-5)				
Target Organ Effects	Species	Result	Method	
Skin	rabbit	Mild skin irritation	OECD 404	4h***
Eyes	rabbit	No eye irritation***	OECD 405	24h

### 2-Ethylhexanoic acid, CAS: 149-57-5

#### **Assessment**

Based on available data, the classification criteria are not met for:

skin irritation/corrosion

eye irritation/corrosion

For respiratory irritation, no data are available

Sensitization				
2-Ethylhexanoic acid (	149-57-5)			
Target Organ Effects	Species	Evaluation	Method	
Skin	guinea pig	not sensitizing	OECD 406	2 %, aqueous solution***

### 2-Ethylhexanoic acid, CAS: 149-57-5

#### Assessment

Based on available data, the classification criteria are not met for:

Skin sensitization

For respiratory sensitization, no data are available

Subacute, subchronic and prolonged toxicity				
2-Ethylhexanoic acid (149-57-5)				
Туре	Dose	Species	Method	
Subchronic toxicity	NOAEL: ~ 200 mg/kg/d (90d)	mouse, male/female	EPA OTS 795.2600	Oral
Subchronic toxicity	NOAEL: ~300	rat, male/female	EPA OTS 795.2600	Oral***



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mg/kg/d (90d)			
NOAEL: 200 mg/kg/d (15d)***	rat, male/female***	OECD 407***	Oral***

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#### **Assessment**

Based on available data, the classification criteria are not met for:

STOT RE

Carcinogenicity, Muta	genicity, Repro	ductive toxicity			Carcinogenicity, Mutagenicity, Reproductive toxicity			
2-Ethylhexanoic acid (	149-57-5)							
Туре	Dose	Species	Evaluation	Method				
<b>Developmental Toxicity</b>	NOAEL 25	rabbit		EPA OTS	Maternal toxicity			
	mg/kg/d			798.4900				
<b>Developmental Toxicity</b>		rabbit		EPA OTS	Developmental			
	mg/kg/d			798.4900	toxicity			
Developmental Toxicity	NOAEL >250	rat		EPA OTS	Maternal toxicity			
	mg/kg/d			798.4900				
Developmental Toxicity	NOAEL 100	rat		EPA OTS	Developmental			
	mg/kg/d			798.4900	toxicity			
Reproductive toxicity	NOAEL 250	rat, parental		Oral OECD 443				
	mg/kg/d	<b>.</b>		0 10505 440				
Reproductive toxicity	NOAEL 800	rat, 1.		Oral OECD 443				
	mg/kg/d	Generation, male/female						
Mutagagiaitu			n a grative	OECD 476	la vitra atualu			
Mutagenicity		CHO (Chinese	negative	(Mammalian	In vitro study			
		Hamster Ovary) cells		Gene Mutation)				
Mutaganiaitu			no gotivo	OECD 476				
Mutagenicity		mouse lymphoma cells	negative	(Mammalian				
		lymphoma cells		Gene Mutation)				
Mutagenicity		Salmonella	negative	OECD 471	In vitro study			
ividiagerilaty		typhimurium	liegative	(Ames)	III villo stady			
Mutagenicity		rat lymphocytes	negative	OECD 473	In vitro study			
Watagernoity		lat lymphocytes	licgative	(Chromosomal	III vitio study			
				Aberration)				
Mutagenicity		mouse	negative	OECD 474	Oral			
		male/female			micronucleus test			

### 2-Ethylhexanoic acid, CAS: 149-57-5

#### **CMR Classification**

The available data on CMR properties are summarized in the table above. They do not indicate a classification into categories 1A or 1B

Directive 1272/2008/EC, Annex VI: Repr. 2

#### **Evaluation**

In vitro tests showed mutagenic effects

Did not show carcinogenic effects in animal experiments

No indication for a carcinogenic potential

## 2-Ethylhexanoic acid, CAS: 149-57-5

## Target Organ Systemic Toxicant - Single exposure

Based on available data, the classification criteria are not met for:

STOT SE

**Target Organ Systemic Toxicant - Repeated exposure** 



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Based on available data, the classification criteria are not met for:

STOT RE

### **Aspiration toxicity**

no data available

#### Other adverse effects

Components of the product may be absorbed into the body by inhalation, ingestion and through the skin.

#### **Note**

Handle in accordance with good industrial hygiene and safety practice. Further details on substance data can be found in the registration dossier under the following link:

http://echa.europa.eu/information-on-chemicals/registered-substances.

## **SECTION 12: Ecological information**

## 12.1. Toxicity

Acute aquatic toxicity				
2-Ethylhexanoic acid (149-57-5)				
Species	Exposure time	Dose	Method	
Oryzias latipes (Medaka)	96h	LC50: > 100 mg/l	OECD 203 read across***	
Daphnia magna (Water flea)	48h	EC50: 85,4 mg/l	79/831/EEC.C2	
Desmodesmus subspicatus	72h	EC50: 49,3 mg/l (Growth rate)***	DIN 38412, part 9	
Pseudomonas putida	17 h	EC50: 112,1 mg/l (Growth inhibition)	DIN 38412, part 8	
Oncorhynchus mykiss (rainbow trout)***	96h***	LC50: 180 mg/l***	OECD 203***	

Long term toxicity					
2-Ethylhexanoic acid (149-57-5)					
Type	Species	Dose	Method		
Reproductive toxicity	Daphnia magna (Water flea)	LC50: 25 mg/l/21d***	OECD 211		
Reproductive toxicity***	Daphnia magna (Water flea)***	NOEC: 18 mg/l***	OECD 211***	read across***	
Aquatic toxicity***	Desmodesmus subspicatus***	EC10: 32 mg/l (72 h)***	DIN 38412 / part 9***		
Aquatic toxicity***	Pseudokirchneriella subcapitata***	NOEC: 130 mg/l (3d) Growth rate***	OECD 201***	read across***	

## 12.2. Persistence and degradability

2-Ethylhexanoic acid, CAS: 149-57-5

Biodegradation

99 % (28 d), Sewage, domestic, aerobic, OECD 301 E.

Abiotic Degradation			
2-Ethylhexanoic acid (149-57	-5)		
Type	Result	Method	
Photolysis	Half-life (DT50): 47,1 h	calculated	
Hydrolysis	not expected		



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## 12.3. Bioaccumulative potential

2-Ethylhexanoic acid (149-57-5)		
Туре	Result	Method
log Pow	3,0 @ 25 °C (77 °F)***	measured, OECD 107

## 12.4. Mobility in soil

2-Ethylhexanoic acid (149-57-5)		
Туре	Result	Method
Adsorption/Desorption	Koc: ≤ 140,87 at ambient temperature***	OECD 106
Surface tension	Surface activity not expected 43,2 mN/m @ 20 °C (68 °F)***	OECD 115***
Distribution to environmental compartments	Air: 0,93 Soil: 3,64 Water: 91,7 Sediment: 11,2***	Calculation according Mackay, Level I***

#### 12.5. Results of PBT and vPvB assessment

#### 2-Ethylhexanoic acid, CAS: 149-57-5

#### PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

#### 12.6. Other adverse effects

## 2-Ethylhexanoic acid, CAS: 149-57-5

No data available

## **SECTION 13: Disposal considerations**

#### 13.1. Waste treatment methods

#### **Product Information**

Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.

Hazardous waste according to European Waste Catalogue (EWC)

#### Uncleaned empty packaging

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

## **SECTION 14: Transport information**

Section 14.1 - 14.6

Not restricted ADR/RID



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ADN Container
Not restricted

ADN ADN Tanker

**14.1. UN number** ID 9006

**14.2. UN proper shipping name** Environmentally hazardous substance, liquid, n.o.s.

**14.3. Transport hazard class(es)**Subsidiary Risk

9
N3, F

14.4. Packing group

14.5. Environmental hazards14.6. Special precautions for userno data available

ICAO-TI / IATA-DGR Not restricted

IMDG Not restricted

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Product name 2-Ethylhexanoic acid

Ship type 3
Pollution category Y

## SECTION 15: Regulatory information

# 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

## Regulation 1272/2008, Annex VI

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Classification Repr. 2; H361d Hazard pictograms GHS08 Health hazard

Signal wordWarningHazard statementsH361d

#### **International Inventories**

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AICS (AU)
DSL (CA)
IECSC (CN)
EC-No. 2057436 (EU)
ENCS (2)-608 (JP)
ISHL (2)-608 (JP)
KECI KE-13740 (KR)
INSQ (MX)



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PICCS (PH) TSCA (US) NZIoC (NZ) TCSI (TW)

## National regulatory information Egypt

**Banned Chemicals (Unified List of Hazardous Substances, List A)** not listed

Substances Requiring Permits (Unified List of Hazardous Substances, List B) not listed

Non-Restricted Substances (Unified List of Hazardous Substances, List C) not listed

## National regulatory information Israel

Harmful Chemicals (Hazardous Substances Law, 5753-1993, Annex 1 not listed

Toxic Chemicals (Hazardous Substances Law, 5753-1993, Annex 2 not listed

Hazardous materials requiring annual testing (Labor Inspection Regs., Appendix 1) not listed

Hazardous Substances Regulations (Classification & Exemptions) not listed

## National regulatory information South Africa

Group 1 Hazardous Substances (G.N.R 452) not listed

### **National regulatory information United Arab Emirates**

Prohibited and restricted imports (Ministry of Environment and Water) not listed

For details and further information please refer to the original regulation.

### SECTION 16: Other information

#### Full text of H-Statements referred to under sections 2 and 3

H361d: Suspected of damaging the unborn child.

#### **Abbreviations**

A table of terms and abbreviations can be found under the following link: http://echa.europa.eu/documents/10162/13632/information\_requirements\_r20\_en.pdf

#### Training advice

For effective first-aid, special training / education is needed.



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## Sources of key data used to compile the datasheet

Information contained in this safety data sheet is based on OQ owned data and public sources deemed valid or acceptable. The absence of data elements required by OSHA, ANSI or Annex II, Regulation 1907/2006/EC indicates, that no data meeting these requirements is available.

## Further information for the safety data sheet

Changes against the previous version are marked by \*\*\*. Observe national and local legal requirements. For more information, other material safety data sheets or technical data sheets please consult the OQ homepage (www.chemicals.oq.com).

#### **Disclaimer**

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**End of Safety Data Sheet**