



Safety Data Sheet (SDS) According to the OSHA Hazard Communication Standard 29 CFR 1910.1200

Issuing Date: 2018-01-19

Revision Date: 2024-05-16

Version: 2

SECTION 1. Identification

Product identifier

Product No 7170
Product name PathScan® Total Akt1 Sandwich ELISA Kit
Kit Component
99700: Akt Rabbit mAb Coated Microwells
13080: Akt1 Mouse Detection mAb
13304: Anti-mouse IgG, HRP-linked Antibody (ELISA Formulated)
14621: Green Detection Antibody Diluent 2
13515: HRP Diluent
11083: ELISA Sample Diluent
7002: STOP Solution
7004: TMB Substrate
9801: ELISA Wash Buffer (20X)
9803: Cell Lysis Buffer (10X)

Hazardous Components

13515: HRP Diluent
7002: STOP Solution
9801: ELISA Wash Buffer (20X)
9803: Cell Lysis Buffer (10X)

UN number UN3265 (maleic acid)

Recommended use of the chemical and restrictions on use

Identified uses This product is intended for research purposes only.

Manufacturer, importer, supplier

Manufacturer address Cell Signaling Technology, Inc.
3 Trask Lane
Danvers, MA 01923
United States
TEL: +1 978 867 2300
FAX: +1 978 867 2400
Website www.cellsignal.com
Email address support@cellsignal.com
Emergency telephone number In case of emergency call CHEMTREC 1-800-424-9300

SECTION 2. Hazard(s) identification

Classification

Classification and label elements described below are inclusive of all hazards of the combined kit. The most severe classifications

are listed for each endpoint. Refer to individual kit component SDS for classification and label elements for each component present in the kit.

Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1

GHS Label elements, including precautionary statements



Signal Word

Danger

Hazard statement(s)

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

Precautionary Statement(s)

Do not breathe dust/fume/gas/mist/vapors/spray.

Wash face, hands and any exposed skin thoroughly after handling.

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

Contaminated work clothing should not be allowed out of the workplace.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash before reuse

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor/physician.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Immediately call a POISON CENTER or doctor/physician

Store locked up.

Dispose of contents/container to an approved waste disposal plant.

Supplementary Hazard Information

Hazards not otherwise classified (HNOC)

Harmful to aquatic life with long lasting effects.

SECTION 3. Composition/information on ingredients

Kit Component

7002: STOP Solution

DANGER: Causes severe skin burns and eye damage. May cause an allergic skin reaction.

Chemical name	CAS No	Weight-%
maleic acid	110-16-7	3-7

Kit Component

9801: ELISA Wash Buffer (20X)

WARNING: May cause an allergic skin reaction.

Chemical name	CAS No	Weight-%
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1)	55965-84-9	0.005-0.025

Kit Component 11083: ELISA Sample Diluent

Chemical name	CAS No	Weight-%
sodium azide	26628-22-8	<0.1

Kit Component 9803: Cell Lysis Buffer (10X)

DANGER: Causes serious eye damage. Causes skin irritation. Harmful to aquatic life with long lasting effects.

Chemical name	CAS No	Weight-%
polyethylene glycol	9002-93-1	10
p-(1,1,3,3-tetramethylbutyl)phenylether		
tetrasodium pyrophosphate, decahydrate	13472-36-1	0.1-1

Kit Component 14621: Green Detection Antibody Diluent 2

Chemical name	CAS No	Weight-%
sodium azide	26628-22-8	<0.1

Kit Component 13515: HRP Diluent

WARNING: May cause an allergic skin reaction

Chemical name	CAS No	Weight-%
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1)	55965-84-9	0.005-0.025

Kit Component 99700: Akt Rabbit mAb Coated Microwells
13080: Akt1 Mouse Detection mAb
13304: Anti-mouse IgG, HRP-linked Antibody (ELISA Formulated)
7004: TMB Substrate

These products do not contain substances at concentrations requiring disclosure under 29 CFR 1910.1200 (OSHA Hazard Communication Standard).

SECTION 4. First-aid measures

Eye contact	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation or rash occurs: Get medical advice/attention.
Inhalation	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. If not breathing, give artificial respiration.
Ingestion	Get medical attention. Clean mouth with water and afterwards drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Contains kit components which may cause the following effects, refer to individual component SDSs for full information on symptoms. Liquid, aerosols and vapors of this product are irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation and/or a feeling like that of fine dust in the eyes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Contains an animal derived biological. May produce an allergic reaction in susceptible individuals. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Advice for emergency responders**General advice**

For further assistance, contact your local Poison Control Center.

Protection of first-aiders

Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves

SECTION 5. Fire-fighting measures**Extinguishing media****Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

Carbon dioxide (CO₂)

Foam

Water spray

Dry powder

Specific hazards arising from the chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6. Accidental release measures**Personal precautions, protective equipment and emergency procedures****For non-emergency personnel**

Avoid contact with skin, eyes and clothing. Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other information

Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Do not allow material to contaminate ground water system. Should not be released into the environment. Do not flush into surface

water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

SECTION 7. Handling and storage

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation at machinery.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions	Keep away from direct sunlight. Keep containers tightly closed in a dry, cool and well-ventilated place.
Packaging material	No information available.
Incompatible products	Metals, Strong oxidizing agents, strong acids, and strong bases

SECTION 8. Exposure controls/personal protection

Control parameters

Occupational exposure limit values			
Chemical name	ACGIH TLV	OSHA PEL	NIOSH REL
tetrasodium pyrophosphate, decahydrate	-	-	TWA : 5 mg/m ³
sodium azide	Ceiling: 0.29 mg/m ³ Ceiling: 0.11 ppm	-	Ceiling: 0.1 ppm Ceiling: 0.3 mg/m ³

Appropriate engineering controls

Showers, eyewash stations, and ventilation systems.

Individual protection measures, such as personal protective equipment

Personal protective equipment (PPE) needs to be selected depending on the implemented engineering controls, frequency/duration of work activities and the concentrations of the hazardous substance.

Eye/face protection	Tightly fitting safety goggles.
Skin and body protection	Lightweight protective clothing. Impervious gloves.
Respiratory protection	In case of inadequate ventilation wear respiratory protection.
Hygiene measures	Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Provide regular cleaning of equipment, work area and clothing. Keep away from food, drink and animal feeding stuffs. Wear suitable gloves and eye/face protection.

SECTION 9. Physical and chemical properties

Information on the known physical chemical properties of each component within Kit are given below. If not included, information is either not available or not applicable. Refer to individual kit component SDS for further information.

Information on basic physical and chemical properties

Kit Component Physical state Appearance	99700: Akt Rabbit mAb Coated Microwells Solid Microwell Plate
Kit Component Physical state Appearance Color	13304: Anti-mouse IgG, HRP-linked Antibody (ELISA Formulated) Solid Powder, Lyophilized Red
Kit Component Physical state Appearance Color pH	13080: Akt1 Mouse Detection mAb Solid Powder, Lyophilized Green 7.4 (20 °C)
Kit Component Physical state Appearance Color pH	7002: STOP Solution Liquid Clear Colorless 1.2 (20 °C)
Kit Component Physical state Appearance Color pH	7004: TMB Substrate Liquid Clear Light yellow 3.3-3.8 (20 °C)
Kit Component Physical state Appearance Color pH	9801: ELISA Wash Buffer (20X) Liquid Clear Colorless 6.4 (20 °C)
Kit Component Physical state Appearance Color pH	9803: Cell Lysis Buffer (10X) Liquid Clear Colorless 7.5 (20 °C)
Kit Component Physical state Appearance Color pH	11083: ELISA Sample Diluent Liquid Clear Blue 7.1 (20 °C)
Kit Component Physical state Appearance Color pH	14621: Green Detection Antibody Diluent 2 Liquid Clear Green 7.4 (20°C)
Kit Component Physical state Appearance Color pH	13515: HRP Diluent Liquid Clear Red 7.4 (20°C)

SECTION 10. Stability and reactivity

Reactivity

No information available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Hazardous reactions	None under normal processing.
Hazardous polymerization	None under normal processing.

Conditions to Avoid

Extremes of temperature and direct sunlight, Exposure to air or moisture over prolonged periods, Over a period of time, sodium azide may react with copper, lead, brass, or solder in plumbing systems to form an accumulation of the HIGHLY EXPLOSIVE compounds of lead azide & copper azide

Incompatible Materials

Metals, Strong oxidizing agents, strong acids, and strong bases

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors

SECTION 11. Toxicological information

Information on likely routes of exposure

Product Information

Refer to kit component SDS for full toxicological information. This material should only be handled by, or under the close supervision of, those properly qualified in the handling and use of potentially hazardous chemicals. It should be borne in mind that the toxicological and physiological properties of this compound is not well defined.

Inhalation

Kit Component Inhalation	13080: Akt1 Mouse Detection mAb May cause allergic respiratory reaction
Kit Component Inhalation	13304: Anti-mouse IgG, HRP-linked Antibody (ELISA Formulated) May cause allergic respiratory reaction
Kit Component Inhalation	7002: STOP Solution Aerosol expected to be irritating based on components
Kit Component Inhalation	9801: ELISA Wash Buffer (20X) Avoid breathing vapors or mists May cause irritation of respiratory tract
Kit Component Inhalation	13515: HRP Diluent Avoid breathing vapors or mists May cause irritation of respiratory tract

Eye contact

Kit Component Eye contact	13515: HRP Diluent Contact with eyes may cause irritation
Kit Component Eye contact	7002: STOP Solution May cause irreversible damage to eyes
Kit Component Eye contact	9801: ELISA Wash Buffer (20X) Expected to be an irritant based on components
Kit Component Eye contact	9803: Cell Lysis Buffer (10X) Expected to be an irritant based on components

Skin contact

Kit Component Skin contact	13080: Akt1 Mouse Detection mAb Repeated or prolonged skin contact may cause allergic reactions with susceptible persons
Kit Component Skin contact	13304: Anti-mouse IgG, HRP-linked Antibody (ELISA Formulated) Repeated or prolonged skin contact may cause allergic reactions with susceptible persons
Kit Component Skin contact	13515: HRP Diluent Repeated or prolonged skin contact may cause allergic reactions with susceptible persons
Kit Component Skin contact	7002: STOP Solution Corrosive to skin Prolonged contact with skin is harmful
Kit Component Skin contact	9801: ELISA Wash Buffer (20X) Repeated or prolonged skin contact may cause allergic reactions with susceptible persons Expected to be an irritant based on components

Ingestion

Kit Component Ingestion	7002: STOP Solution Ingestion causes burns of the upper digestive and respiratory tract. Harmful if swallowed
Kit Component Ingestion	9801: ELISA Wash Buffer (20X) Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea

Information on toxicological effects**Component Information**

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
polyethylene glycol p-(1,1,3,3-tetramethylbutyl)phenylether	= 1800 mg/kg (Rat)	-	-
maleic acid	708 mg/kg (Rat)	1,560 mg/kg (Rabbit)	> 0.72 mg/L (Rat) 1h
sodium azide	= 27 mg/kg (Rat)	= 20 mg/kg (Rabbit) = 50 mg/kg (Rat)	-
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)	= 53 mg/kg (Rat) = 481 mg/kg (Rat) 232 - 249 mg/kg (Rat) = 120 mg/kg (Rat)	= 200 mg/kg (Rabbit)	= 1.23 mg/L (Rat) 4 h = 0.11 mg/L (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Symptoms**

Contains kit components which may cause the following effects, refer to individual component SDSs for full information on symptoms. Liquid, aerosols and vapors of this product are irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation and/or a feeling like that of fine dust in the eyes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Contains an animal derived biological. May produce an allergic reaction in susceptible individuals. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

Skin and Eye Corrosion/Irritation

Kit Component	7002: STOP Solution
Serious eye damage/eye irritation	Risk of serious damage to eyes
Skin corrosion/irritation	Causes burns

Kit Component	9801: ELISA Wash Buffer (20X)
Serious eye damage/eye irritation	Causes serious eye irritation
Skin corrosion/irritation	Causes skin irritation

Kit Component	9803: Cell Lysis Buffer (10X)
Serious eye damage/eye irritation	Irritating to eyes

Sensitization

Kit Component	13080: Akt1 Mouse Detection mAb
Respiratory Sensitization	May cause allergy or asthma symptoms or breathing difficulties if inhaled
Skin Sensitization	May cause skin sensitization

Kit Component	13304: Anti-mouse IgG, HRP-linked Antibody (ELISA Formulated)
Respiratory Sensitization	May cause allergy or asthma symptoms or breathing difficulties if inhaled
Skin Sensitization	May cause skin sensitization

Kit Component	13515: HRP Diluent
Skin Sensitization	Product is or contains a sensitizer. May cause an allergic skin reaction

Kit Component	9801: ELISA Wash Buffer (20X)
Skin Sensitization	Product is or contains a sensitizer. May cause an allergic skin reaction

Kit Component	7002: STOP Solution
Skin Sensitization	May cause skin sensitization

Mutagenic effects

Kit Component	7002: STOP Solution
Mutagenic effects	Not mutagenic in AMES Test

Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identifiable as probable, possible or confirmed carcinogen by IARC, ACGIH, NTP, or OSHA.

Reproductive toxicity

No information available.

Systemic Target Organ Toxicity (STOT)

Kit Component	7002: STOP Solution
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STOT - repeated exposure
STOT - single exposure

May cause damage to organs through prolonged or repeated exposure
Respiratory system

Aspiration Hazard

No information available.

SECTION 12. Ecological information

Ecotoxicity**Product Information****Ecotoxicity**

Kit Component
Ecotoxicity

7002: STOP Solution
Toxic to aquatic life

Kit Component
Ecotoxicity

9801: ELISA Wash Buffer (20X)
Harmful to aquatic life with long lasting effects

Component Information

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
polyethylene glycol p-(1,1,3,3-tetramethylbutyl)phenylether	-	LC50 8.9 mg/l (Pimephales promelas) 96 h	EC50 26 mg/l (Daphnia) 48 h
maleic acid	-	LC50 5 mg/L (Pimephales promelas) 96 h	EC50 250 - 400 mg/L (Daphnia magna) 48 h
sodium azide	EC50 0.35 mg/L (Pseudokirchneriella subcapitata) 96 h	LC50 0.8 mg/L (Oncorhynchus mykiss) 96 h LC50 5.46 mg/L (Pimephales promelas) 96 h LC50 0.7 mg/L (Lepomis macrochirus) 96 h	LC100 1 mg/L (Orconectes rusticus) 96 h
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)	EC50 0.11 - 0.16 mg/L (Pseudokirchneriella subcapitata) 72 h EC50 0.31 mg/L (Anabaena flos-aquae) 120 h EC50 0.03 - 0.13 mg/L (Pseudokirchneriella subcapitata) 96 h	LC50 1.6 mg/L (Oncorhynchus mykiss) 96 h	EC50 4.71 mg/L (Daphnia magna) 48 h EC50 0.71 - 0.99 mg/L (Daphnia magna) 48 h EC50 0.12 - 0.3 mg/L (Daphnia magna) 48 h

Persistence and degradability

Kit Component
Persistence and degradability

7002: STOP Solution
Product is biodegradable

Kit Component
Persistence and degradability

9801: ELISA Wash Buffer (20X)
Not readily biodegradable

Bioaccumulation

Kit Component
Bioaccumulation

7002: STOP Solution
Not likely to bioaccumulate

Kit Component
Bioaccumulation

9801: ELISA Wash Buffer (20X)
Not likely to bioaccumulate

Chemical name	Octanol-Water Partition Coefficient
maleic acid	0.32

Mobility

Kit Component Mobility	7002: STOP Solution Will likely be mobile in the environment due to its water solubility
Kit Component Mobility	9801: ELISA Wash Buffer (20X) Will likely be mobile in the environment due to its water solubility

Other adverse effects

No information available.

SECTION 13. Disposal considerations**Waste Disposal Methods**

Should not be released into the environment.

Disposal considerations

Do not empty into drains; dispose of this material and its container in a safe way. Dispose of wastes in an approved waste disposal facility.

SECTION 14. Transport information

This material is subject to regulation as a hazardous material for shipping:

DOT

UN number	UN3265 (maleic acid)
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (maleic acid)
Transport hazard class(es)	8
Packing group	III

IATA

UN number	UN3265
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (maleic acid)
Transport hazard class(es)	8
Packing group	III

SECTION 15. Regulatory information**North American Inventory Listing**

This product contains a chemical or chemicals included in the Toxic Substances Control Act (TSCA) Chemical Substance Inventory, Domestic Substances List (DSL) and/or Non-Domestic Substances List (NDSL):

Chemical name	TSCA 8(b)	TSCA 12(b)	DSL	NDSL
polyethylene glycol p-(1,1,3,3-tetramethylbutyl)phenylether	Listed	Not Listed	Listed	Not Listed
maleic acid	Listed	Not Listed	Listed	Not Listed
sodium azide	Listed	Not Listed	Listed	Not Listed
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1)	Not Listed	Section 5: 1 %	Listed	Not Listed

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical name	CAS No	SARA 313 - Threshold Values %
trisodium tetraoxovanadate	13721-39-6	1.0
sodium azide	26628-22-8	1.0
magnesium nitrate	10377-60-3	1.0
copper dinitrate	3251-23-8	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances	CWA - Bioaccumulative Chemicals of Concern (BCCs)
maleic acid	5000 lb	Not Listed	Not Listed	Listed	Not Listed

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
maleic acid	5000 lb	Not Listed
sodium azide	1000 lb	1000 lb

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product contains the following U.S. State Right to Know chemicals:

Chemical name	New Jersey	Massachusetts	Pennsylvania
maleic acid	Listed	Listed	Listed
disodium hydrogenorthophosphate	Listed	Listed	Listed
tetrasodium pyrophosphate, decahydrate	Listed	Listed	Listed
sodium azide	Listed	Listed	Listed
trisodium tetraoxovanadate	Listed	Not Listed	Not Listed
magnesium nitrate	Listed	Listed	Listed
disodium hydrogenorthophosphate	Listed	Listed	Listed
copper dinitrate	Listed	Listed	Listed

SECTION 16. Other information

Issuing Date: 2018-01-19

Revision Date: 2024-05-16

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet