MATERIAL SAFETY DATA SHEET
according to the Global Harmonized System

Date of issue: 02/04/2013 Version 1.0

SECTION 1.Identification

Product identifier

Product number	808671
Product name	2,6-Dimethylaniline for synthesis

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

Identified uses	Intermediate for use under strictly controlled conditions, Chemical for synthesis

Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | SDS Phone Support: +1-978-715-1335 | General Inquiries: +1-978-751-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) e-mail: mm_sds@merckgroup.com
Emergency telephone	613-996-6666 CANUTEC (Canada) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification

Carcinogenicity, Category 2, H351
Acute toxicity, Category 4, Inhalation, H332
Acute toxicity, Category 4, Dermal, H312
Acute toxicity, Category 4, Oral, H302
Specific target organ systemic toxicity - single exposure, Category 3, H335
Skin irritation, Category 2, H315
Chronic aquatic toxicity, Category 2, H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms

Signal Word

Warning

Hazard Statements
H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.
H315 Causes skin irritation.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements
P260 Do not breathe vapors.
P262 Do not get in eyes, on skin, or on clothing.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P281 Use personal protective equipment as required.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Other hazards
None known.

SECTION 3. Composition/information on ingredients

Formula	$2,6\text{-}(CH_3)_2C_6H_3NH_2$	$C_8H_{11}N$ (Hill)
CAS-No.	87-62-7	
Molar mass	121.18 g/mol	

Hazardous ingredients
Chemical Name (Concentration)
CAS-No.
2,6-dimethylaniline (>= 90 % - <= 100 %)
87-62-7

SECTION 4. First aid measures
Description of first-aid measures
Inhalation
After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

Skin contact
After skin contact: wash off with plenty of water. Remove contaminated clothing. Get medical attention.

Eye contact
After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist if necessary.

Ingestion
After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed
irritant effects, Cough, Nausea, Vomiting, Dizziness, euphoria, Shortness of breath, Cyanosis

Indication of any immediate medical attention and special treatment needed
No information available.

SECTION 5. Fire-fighting measures

Extinguishing media
Suitable extinguishing media
Carbon dioxide (CO2), Foam, Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture
Combustible material
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air on intense heating.
Development of hazardous combustion gases or vapors possible in the event of fire.
Fire may cause evolution of:
nitrogen oxides

Advice for firefighters
Special protective equipment for fire-fighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information
Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions
Do not empty into drains.

Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent and neutralizing material (e.g. Chemizorb® OH^-, Merck Art. No. 101596). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

Observe label precautions.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Protected from light. Keep locked up or in an area accessible only to qualified or authorized persons.

Store at +15°C to +25°C (+59°F to +77°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
2,6-dimethylaniline 87-62-7			
CAD AB OEL	Time Weighted Average (TWA):	0.5 ppm 2.5 mg/m³	
	Skin designation:		Can be absorbed through the skin.
CAD MB OEL	Time Weighted Average (TWA):	0.5 ppm	Form of exposure: Inhalable fraction and vapor.
	Skin designation:		Can be absorbed through the skin. Form of exposure: Inhalable fraction and vapor.
CAD ON OEL	Time Weighted Average (TWAEV):	0.5 ppm	Form of exposure: Inhalable fraction and vapor.
	Skin designation:		Can be absorbed through the skin. Form of exposure: Inhalable fraction and vapor.
OEL (QUE)	Time Weighted Average (TWA):	0.5 ppm 2.5 mg/m³	Exposure must be minimized.
	Skin designation:		Can be absorbed through the skin.

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Safety glasses

Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:
protective clothing

Respiratory protection
required when vapors/aerosols are generated.
Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	yellow
Odor	amine-like
Odor Threshold	No information available.
pH	12.5 at 100 g/l 68 °F (20 °C)
Melting point	10 - 12 °C
Boiling point/boiling range	421 °F (216 °C) at 1,013 hPa
Flash point	198 °F (92 °C) Method: DIN 51758
Evaporation rate	No information available.
Flammability (solid, gas)	not applicable
Lower explosion limit	1.3 %(V)
Upper explosion limit	6.9 %(V)
Vapor pressure	0.2 hPa at 68 °F (20 °C) 1.5 hPa at 122 °F (50 °C)
Relative vapor density	No information available.

Relative density	0.98 g/cm³ at 68 °F (20 °C)
Water solubility	13 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	log Pow: 1.96 (25 °C) OECD Test Guideline 107 Bioaccumulation is not expected (log Pow <1).
Autoignition temperature	No information available.
Decomposition temperature	599 °F (315 °C)
Viscosity, dynamic	3.44 mPa.s at 68 °F (20 °C)
Explosive properties	Not classified as explosive.
Ignition temperature	914 °F (490 °C) Method: DIN 51794

SECTION 10. Stability and reactivity

Reactivity
Forms explosive mixtures with air on intense heating.

Chemical stability
Sensitivity to light
Sensitive to air.

Possibility of hazardous reactions
Violent reactions possible with:

Oxidizing agents, acids, acid halides, halogens, Acid anhydrides

Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitosamines!

Conditions to avoid
Strong heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.

Incompatible materials
rubber, various plastics

Hazardous decomposition products
in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure
Inhalation, Eye contact, Skin contact

Acute oral toxicity
LD50 rat: 1,290 mg/kg
OECD Test Guideline 401

absorption

Acute inhalation toxicity
LC50 rat: > 0.75 mg/l; 7 h
OECD Test Guideline 403
Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

absorption

Irritating to respiratory system.

Acute dermal toxicity
absorption

Skin irritation
rabbit
Result: Irritations
OECD Test Guideline 404

Causes skin irritation.

Eye irritation
rabbit
Result: Eye irritation
OECD Test Guideline 405

Sensitization
In animal experiments: mouse
Result: negative
Method: OECD Test Guideline 429

CMR effects
Carcinogenicity:
Suspected of causing cancer.

Specific target organ systemic toxicity - single exposure
May cause respiratory irritation.

Specific target organ systemic toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	Group 2B: Possibly carcinogenic to humans	
	2,6-dimethylaniline	87-62-7
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.	
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.	
ACGIH	Confirmed animal carcinogen with unknown relevance to humans.	
	2,6-dimethylaniline	87-62-7
	2,3-Xylidine	87-59-2
	2,4-Xylidine	95-68-1

Further information

After absorption:
Nausea, Vomiting, Dizziness, euphoria, Changes in the blood count, Methemoglobinemia with headache, cardiac arrhythmia, drop in blood pressure, dyspnoea, and spasms, key symptom: cyanosis (blue coloration of the blood).
Damage to:
Liver, Kidney
Effect potentiated by: ethanol
Other information
Under given conditions, contact with nitrites or nitric acid can lead to the formation of nitrosamines, which have shown themselves to be carcinogenic in animal experiments.
Further data:
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish
LC50 Oryzias latipes (Orange-red killifish): > 98 mg/l; 96 h
OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates
EC50 Tetrahymen pyriformis: 330 mg/l; 48 h (External MSDS)

EC50 Daphnia magna (Water flea): 20 mg/l; 48 h
OECD Test Guideline 202

NOEC Daphnia magna (Water flea): 2.2 mg/l; 21 d
OECD Test Guideline 211

Toxicity to algae
IC50 Pseudokirchneriella subcapitata (green algae): > 100 mg/l; 72 h (External MSDS)

Toxicity to bacteria
microtox test EC50 Photobacterium phosphoreum: 26.5 mg/l; 30 min (External MSDS)

EC20 activated sludge: ca. 150 mg/l; 30 min
OECD Test Guideline 209

Persistence and degradability

Biodegradability
< 10 %; 28 d
OECD Test Guideline 301F
Not readily biodegradable.

> 70 %; 11 d
OECD Test Guideline 302B
Easily eliminable.

Adsorbed organic bound halogens (AOX)
Product does not contain any organic halogens.

Bioaccumulative potential

Partition coefficient: n-octanol/water
log Pow: 1.96 (25 °C)
OECD Test Guideline 107
Bioaccumulation is not expected (log Pow <1).

Mobility in soil

No information available.

Other adverse effects

Additional ecological information
Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number	UN 1711
Proper shipping name	XYLIDINES, LIQUID
Class	6.1
Packing group	II
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 1711
Proper shipping name	XYLIDINES, LIQUID
Class	6.1
Packing group	II
Environmentally hazardous	--

Special precautions for user	no

Sea transport (IMDG)

UN number	UN 1711
Proper shipping name	XYLIDINES, LIQUID
Class	6.1
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-A S-A

SECTION 15. Regulatory information

United States of America

Canada

WHMIS Classification

B3	Combustible Liquid
D1A	Very Toxic Material Causing Immediate and Serious Toxic Effects
D2A	Very Toxic Material Causing Other Toxic Effects
D2B	Toxic Material Causing Other Toxic Effects

Combustible Liquid, Highly Toxic, Carcinogen, Skin irritant, Respiratory irritant
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

Notification status

TSCA:	On TSCA Inventory
DSL:	This product contains one or several components listed in the Canadian NDSL. *Ingredients* 2,3-Xylidine 2,4-Xylidine

SECTION 16. Other information

Training advice
Provide adequate information, instruction and training for operators.

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

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H411	Toxic to aquatic life with long lasting effects.

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

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