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

1.1 Product identifier

Trade name *Phenol*

Stock number: A15760
CAS Number:
108-95-2
EC number:
203-632-7
Index number:
604-001-00-2
1.2 Relevant identified uses of the substance or mixture and uses advised against. No further relevant information available.
Identified use: SU24 Scientific research and development

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Alfa Aesar GmbH & Co.KG
A Johnson Matthey Company
Zeppelinstr. 7b
76185 Karlsruhe / Germany
Tel: +49 (0) 721 84007 280
Fax: +49 (0) 721 84007 300
Email: tech@alfa.com
www.alfa.com
Informing department: Product safety Tel + +049 (0) 7275 988687-0
1.4 Emergency telephone number:
Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)
Poison Information Center Mainz
www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008


GHS06 skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.
Acute Tox. 3 H311 Toxic in contact with skin.
Acute Tox. 3 H331 Toxic if inhaled.


GHS08 health hazard

Muta. 2 H341 Suspected of causing genetic defects.
STOT RE 2 H373 May cause damage to the kidneys, the liver, the bladder, the brain, the endocrine system and the immune system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative, Dermal.


GHS05 corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC


T; Toxic

R23/24/25: Toxic by inhalation, in contact with skin and if swallowed.


C; Corrosive

R34: Causes burns.


Xn; Harmful

R48/20/21/22-68: Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. Possible risk of irreversible effects.

Muta. Cat. 3
Information concerning particular hazards for human and environment: Not applicable
Other hazards that do not result in classification No information known.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008 The substance is classified and labelled according to the CLP regulation.
Hazard pictograms


GHS05 GHS06 GHS08

Signal word Danger
Hazard statements
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H331 Toxic if inhaled.
H314 Causes severe skin burns and eye damage.
H341 Suspected of causing genetic defects.
H373 May cause damage to the kidneys, the liver, the bladder, the brain, the endocrine system and the immune system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative, Dermal.
Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P361 Remove/Take off immediately all contaminated clothing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
2.3 Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

(Contd. on page 2)

Trade name *Phenol*

(Contd. of page 1)

SECTION 3: Composition/information on ingredients

3.1 Substances
CAS# Designation:
108-95-2 Phenol
Identification number(s):
EC number: 203-632-7
Index number: 604-001-00-2

SECTION 4: First aid measures

4.1 Description of first aid measures
General information
Instantly remove any clothing soiled by the product.
Remove breathing apparatus only after soiled clothing has been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
Seek immediate medical advice.
After skin contact
Instantly wash with water and soap and rinse thoroughly.
Seek immediate medical advice.
After eye contact Rinse opened eye for several minutes under running water. Then consult doctor.
After swallowing Do not induce vomiting; instantly call for medical help.
4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.
4.3 Indication of any immediate medical attention and special treatment needed No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
5.2 Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Carbon monoxide and carbon dioxide
5.3 Advice for firefighters
Protective equipment:
Wear self-contained breathing apparatus.
Wear full protective suit.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
6.2 Environmental precautions:
Do not allow material to be released to the environment without proper governmental permits.
Do not allow product to reach sewage system or water bodies.
Do not allow to enter the ground/soil.
6.3 Methods and material for containment and cleaning up:
Use neutralizing agent.
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.
Prevention of secondary hazards: Keep away from ignition sources.
6.4 Reference to other sections
See Section 7 for information on safe handling
See section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Handle under dry protective gas.
Keep containers tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
Open and handle container with care.
Information about protection against explosions and fires: Keep ignition sources away - Do not smoke.

7.2 Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and containers: Refrigerate
Information about storage in one common storage facility:
Store away from oxidising agents.
Store away from air.
Protect from heat.
Further information about storage conditions:
Store under dry inert gas.
This product is air sensitive.
Keep container tightly sealed.
Store in a locked cabinet or with access restricted to technical experts or their assistants.
Refrigerate
7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

8.1 Control parameters

Components with critical values that require monitoring at the workplace:	
108-95-2 Phenol (100,0%)	
AGW (Germany)	Long-term value: 8 mg/m³, 2 ppm 2(II);EU, H, 11
PEL (USA)	Long-term value: 19 mg/m³, 5 ppm Skin
REL (USA)	Long-term value: 19 mg/m³, 5 ppm Ceiling limit: 60* mg/m³, 15,6* ppm *15-min; Skin
TLV (USA)	Long-term value: 19 mg/m³, 5 ppm Skin; BEI

(Contd. on page 3)

Trade name *Phenol*

(Contd. of page 2)

Ingredients with biological limit values:

108-95-2 Phenol (100,0%)

BGW (Germany)	120 mg/g Kreatinin Untersuchungsmaterial: Urin Probennahmezeitpunkt: Expositionsende bzw. Schichtende Parameter: Phenol (nach Hydrolyse)
BEI (USA)	250 mg/g creatinine Medium: urine Time: end of shift Parameter: Phenol with hydrolysis (background, nonspecific)

Additional information: No data

8.2 Exposure controls
Personal protective equipment
General protective and hygienic measures
The usual precautionary measures should be adhered to in handling the chemicals.
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Store protective clothing separately.
Avoid contact with the eyes and skin.
Maintain an ergonomically appropriate working environment.
Breathing equipment: Use self-contained respiratory protective device in emergency situations.
Recommended filter device for short term use:
Use a respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.
Protection of hands:
Check protective gloves prior to each use for their proper condition.
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
Material of gloves Butyl rubber, BR
Penetration time of glove material (in minutes) >480
Glove thickness 0.3 mm
Eye protection:
Tightly sealed safety glasses.
Full face protection
Body protection: Protective work clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
General Information
Appearance:

Form:	Crystalline
Colour:	White to off-white
Smell:	Sweetish
Odour threshold:	Not determined.
pH-value:	Not applicable.
Change in condition	
Melting point/Melting range:	40-43 °C
Boiling point/Boiling range:	181 °C
Sublimation temperature / start:	Not determined
Flash point:	79 °C
Inflammability (solid, gaseous)	Not determined.
Ignition temperature:	595 °C
Decomposition temperature:	Not determined
Self-inflammability:	Not determined.
Danger of explosion:	Product is not explosive.
Critical values for explosion:	
Lower:	1,3 Vol %
Upper:	9,5 Vol %
Steam pressure at 20 °C:	0,3 hPa
Density at 20 °C	1,07 g/cm³
Relative density	Not determined.
Vapour density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water at 20 °C:	82 g/l
Partition coefficient (n-octanol/water):	1,46 log POW
Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity No information known.
10.2 Chemical stability Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided: No decomposition if used and stored according to specifications.
10.3 Possibility of hazardous reactions No dangerous reactions known
10.5 Incompatible materials:
Air
Oxidising agents
Heat
10.6 Hazardous decomposition products: Carbon monoxide and carbon dioxide

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity:
Toxic in contact with skin.
Toxic in contact with skin.
Toxic if inhaled.
Toxic if swallowed.
Danger by skin resorption.
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

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Trade name *Phenol*

(Contd. of page 3)

LD/LC50 values that are relevant for classification:

Oral	LD50	317 mg/kg (rat)
Dermal	LD50	630 mg/kg (rabbit)
Inhalative	LC50	316 mg/m3 (rat)

Skin irritation or corrosion: Causes severe skin burns.
Eye irritation or corrosion: Causes serious eye damage.
Sensitization: No sensitizing effect known.
Germ cell mutagenicity:
Suspected of causing genetic defects.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.
Carcinogenicity:
EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.
EPA-I: Data are inadequate for an assessment of human carcinogenic potential.
IARC-3: Not classifiable as to carcinogenicity to humans.
ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance.
Reproductive toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.
Specific target organ system toxicity - repeated exposure:
May cause damage to the kidneys, the liver, the bladder, the brain, the endocrine system and the immune system through prolonged or repeated exposure.
Route of exposure: Oral, Inhalative, Dermal.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.
Subacute to chronic toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.
Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
Toxic in contact with skin.

SECTION 12: Ecological information

12.1 Toxicity
Aquatic toxicity: No further relevant information available.
12.2 Persistence and degradability No further relevant information available.
12.3 Bioaccumulative potential No further relevant information available.
12.4 Mobility in soil No further relevant information available.
Additional ecological information:
General notes:
Do not allow product to reach ground water, water bodies or sewage system.
Do not allow material to be released to the environment without proper governmental permits.
Water hazard class 2 (Assessment by list): hazardous for water.
Danger to drinking water if even small quantities leak into soil.
Avoid transfer into the environment.
12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Recommendation
Hand over to disposers of hazardous waste.
Must be specially treated under adherence to official regulations.
Consult state, local or national regulations for proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

UN-Number	
ADR, IMDG, IATA	UN1671
14.2 UN proper shipping name	
ADR	1671 PHENOL, SOLID
IMDG, IATA	PHENOL, SOLID
14.3 Transport hazard class(es)	
ADR	
	
Class	6.1 (T2) Toxic substances.
Label	6.1
IMDG, IATA	
	
Class	6.1 Toxic substances.
Label	6.1
Packing group	
ADR, IMDG, IATA	II
14.5 Environmental hazards:	Not applicable.
14.6 Special precautions for user	Warning: Toxic substances.
Kemler Number:	60
EMS Number:	F-A,S-A
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
ADR	
Excepted quantities (EQ):	E4
Limited quantities (LQ)	500 g
Transport category	2
Tunnel restriction code	D/E

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Trade name *Phenol*

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UN "Model Regulation": UN1671, PHENOL, SOLID, 6.1, II

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Australian Inventory of Chemical Substances Substance is listed.

Standard for the Uniform Scheduling of Medicines and Poisons		
108-95-2	Phenol	S2, S4, S5, S6

National regulations
Information about limitation of use:
Employment restrictions concerning young persons must be observed.
For use only by technically qualified individuals.
Classification according to VbF: Not applicable
Technical instructions (air):

Class	Share in %
I	100,0

Water hazard class: Water hazard class 2 (Assessment by list): hazardous for water.
Other regulations, limitations and prohibitive regulations
ELINCS (European List of Notified Chemical Substances) Substance is not listed.
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.
REACH - Pre-registered substances Substance is listed.
15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department
Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organization
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VbF: Verordnung über brennbare Flüssigkeiten, Österreich (Ordinance on the storage of combustible liquids, Austria)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
vPvB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
NTP: National Toxicology Program (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)
Acute Tox. 3: Acute toxicity, Hazard Category 3
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Muta. 2: Germ cell mutagenicity, Hazard Category 2
STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2