



MATERIAL SAFETY DATA SHEET

Revision
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VALOR 32% EC

Saraswati Agro Chemicals (India) Pvt. Ltd. encourages and expects you to read and understand the entire MSDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods and actions.

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1. Substance/preparation and company identification

VALOR 32 % EC

Use: crop protection product, herbicide

Company:

Saraswati Agro Chemicals (India) Pvt. Ltd.
Lane-2, Phase-1 SIDCO Industrial complex,
Bari Brahmna Jammu (J&K)
Pin code- 181133
India.

Customer Information Number: 01923221433
saraswatiagro@gmail.com
Emergency Contact: 01923221914/221433

2. Composition/information on ingredients

Chemical nature

crop protection product, herbicide, Emulsifiable concentrate (EC)

Hazardous ingredients

Imazethapyr

Content (W/W): 2 %
CAS Number: 81335-77-5
Hazard symbol(s): N
R-phrased(s): 50/53

Pendimethalin

Content (W/W): 30 %
CAS Number: 40487-42-1
EC-Number: 254-938-2
INDEX-Number: 609-042-00-
X Hazard symbol(s): Xi, N R-
phrase(s): 43, 50/53



N-Methylpyrrolidone

Content (W/W): 14 %
CAS Number: 872-50-4
EC-Number: 212-828-1
INDEX-Number: 606-021-00-7
Hazard symbol(s): T
R-phrase(s): 61, 36/37/38

Solvent naphtha (petroleum), light arom.

Content (W/W): <= 20 %
CAS Number: 64742-95-6
EC-Number: 265-199-0
INDEX-Number: 649-356-00-4
Hazard symbol(s): Xn
R-phrase(s): 65, 66, 67, 10

Dodecyl benzene sulfonate, calcium salt

Content (W/W): <= 5 %
CAS Number: 26264-06-2
EC-Number: 247-557-8
Hazard symbol(s): Xi
R-phrase(s): 38, 41

1,2,4-trimethylbenzene

Content (W/W): <= 16 % CAS
Number: 95-63-6 EC-Number:
202-436-9 INDEX-Number:
601-043-00-3 Hazard
symbol(s): Xn, N
R-phrase(s): 10, 20, 36/37/38, 51/53

Benzene, 1,2,3-trimethyl-

Content (W/W): <= 4.5 %
CAS Number: 526-73-8
EC-Number: 208-394-8
Hazard symbol(s): Xi
R-phrase(s): 10, 37

mesitylene

Content (W/W): <= 4 %
CAS Number: 108-67-8
EC-Number: 203-604-4
INDEX-Number: 601-025-00-
5 Hazard symbol(s): Xi, N R-
phrase(s): 10, 37, 51/53

propylbenzene

Content (W/W): <= 3 %
CAS Number: 103-65-
1 EC-Number: 203-
132-9
INDEX-Number: 601-024 -00-
X Hazard symbol(s): Xn, N R-
phrase(s): 10, 37, 51/53, 65



Cumene

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Content (W/W): $\leq 3\%$
CAS Number: 98-82-8
EC-Number: 202-704-5
INDEX-Number: 601-024 -00-
X Hazard symbol(s): Xn, N R-
phrase(s): 10, 37, 51/53, 65

The wording of the hazard symbols and R-phrases is specified in chapter 16 if dangerous ingredients are mentioned.

3. Hazard identification

Harmful: may cause lung damage if swallowed.

May cause harm to the unborn child.

Reprotoxic substances (fertility or development) Category 2: Substances which should be regarded as if they cause developmental toxicity to in humans or substances which should be regarded as if they impair fertility in humans.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

The product contains: pendimethalin

May produce an allergic reaction.

4. First-Aid Measures

General advice:

Remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:

Wash thoroughly with soap and water.

On contact with eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:

Immediately rinse mouth and then drink plenty of water, do not induce vomiting, seek medical attention. Do not induce vomiting due to aspiration hazard.



Note to physician:

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further important symptoms and effects are so far not known.

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Suitable extinguishing media:
water spray, foam, dry powder

Specific hazards:
carbon monoxide, carbon dioxide, nitrogen oxides
The substances/groups of substances mentioned can be released in case of fire.

Special protective equipment:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
In case of fire and/or explosion do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental Release Measures

Personal precautions:
Use personal protective clothing. Remove contaminated clothes, undergarments and shoes immediately. Avoid contact with the skin, eyes and clothing.

Environmental precautions:
Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater.

Methods for cleaning up or taking up:
For small amounts: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).
For large amounts: Dike spillage. Pump off product.
Dispose of absorbed material in accordance with regulations. Collect waste in suitable containers, which can be labeled and sealed. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations.

7. Handling and Storage

Handling

No special measures necessary if stored and handled correctly. Ensure thorough ventilation of stores and work areas.



Protection against fire and explosion:

Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy. Vapours may form ignitable mixture with air.

Storage

Segregate from foods and animal feeds.

Further information on storage conditions: Keep away from heat. Protect against moisture. Protect from direct sunlight.

Storage stability:

Storage duration: 24 Months

Protect from temperatures above: 40 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

8. Exposure controls and personal protection

Components with workplace control parameters

1,2,4-trimethylbenzene, 95-63-6;
TWA value 25 ppm (ACGIHTLV)

Benzene, 1,2,3-trimethyl-, 526-73-8;
TWA value 25 ppm (ACGIHTLV)

mesitylene, 108-67-8;
TWA value 25 ppm (ACGIHTLV)

cumene, 98-82-8;
TWA value 50 ppm (ACGIHTLV)

Personal protective equipment

Respiratory protection:

Breathing protection if gases/vapours are formed. Wear respiratory protection if ventilation is inadequate. Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e. g. EN 14387 Type A)

Hand protection:

Suitable chemical resistant safety gloves (EN 374) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) and other

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)



Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures:

The statements on personal protective equipment in the instructions for use apply when handling crop-protection agents in final-consumer packing. Under no circumstances should the product come into contact with the skin of pregnant women or be inhaled by them. Avoid contact with the skin, eyes and clothing. Wearing of closed work clothing is recommended. Take off immediately all contaminated clothing. Store work clothing separately. Keep away from food, drink and animal feeding stuffs. No eating, drinking, smoking or tobacco use at the place of work. Hands and/or face should be washed before breaks and at the end of the shift.

9. Physical and Chemical Properties

Form:	liquid	
Colour:	yellow	
Odour:	characteristic	
pH value:	6 - 8	
Boiling range:	approx. 160 - 180 °C	
Flash point:	96 °C	(ASTM D93)
Flammability:	not self-igniting	
Lower explosion limit:	approx. 0.7 %(V)	Information applies to the solvent.
Upper explosion limit:	approx. 5.6 %(V)	Information applies to the solvent.
Ignition temperature:	approx. 349 °C	
Self ignition:	not self-igniting	
Explosion hazard:	not explosive	
Fire promoting properties:	not fire-propagating	
Vapour pressure:	22.61 mbar (23 °C) approx. 3.724 kPa (20 °C)	
Density:	approx. 0.99 g/cm ³ (25 °C)	
Relative density:	approx. 0.99	
Bulk density:	not applicable	
Relative vapour density (air):	not determined	
Solubility in water:	emulsifiable	
Partitioning coefficient n-octanol/water (log Pow):	not applicable	



Other Information:

If necessary, information on other physical and chemical parameters is indicated in this section.

10. Stability and Reactivity

Conditions to avoid:

See MSDS section 7 - Handling and storage.

Thermal decomposition:

No decomposition if stored and handled as prescribed/indicated.

Substances to avoid:

oxidizing agents, strong alkalies

Corrosion to metals: Corrosive effect on:

aluminum
zinc
brass
steel
iron

Hazardous reactions:

No hazardous reactions if stored and handled as prescribed/indicated.

Hazardous decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated.

11. Toxicological Information

Acute toxicity

LD50 rat (oral): 3,506 mg/kg

rat (by inhalation): > 5.54 mg/l 4 h Highest concentration available for testing.

LD50 rat (dermal): > 2,000 mg/kg

Irritation

Primary skin irritation rabbit: non-irritant

Primary irritations of the mucous membrane rabbit: Slightly irritating.

Sensitization

guinea pig: Skin sensitizing effects were not observed in animal studies.

Repeated dose toxicity



Assessment of repeated dose toxicity:
No data available.

Genetic toxicity

Information on: pendimethalin
Assessment of mutagenicity:
No mutagenic effect was found in various tests with microorganisms and mammalian cell culture.
The substance was not mutagenic in a test with mammals.

Information on: Imazethapyr
Assessment of mutagenicity:
No mutagenic effect was found in various tests with microorganisms and mammalian cell culture.
The substance was not mutagenic in a test with mammals.

Carcinogenicity

Assessment of carcinogenicity:
The product has not been tested. The statement has been derived from the properties of the individual components. The results of various animal studies gave no indication of a carcinogenic effect.

Information on: pendimethalin
Assessment of carcinogenicity:
In long-term studies in rats the substance induced thyroid tumors. The effect is caused by an animal specific mechanism that has no human counter part. In long-term studies in mice in which the substance was given by feed, a carcinogenic effect was not observed.

Information on: Imazethapyr
Assessment of carcinogenicity:
In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed.

Reproductive toxicity

Information on: N-Methylpyrrolidone
Assessment of reproduction toxicity:
As shown in animal studies, the product may cause damage to the testes after repeated high exposures that cause other toxic effects.

Developmental toxicity

Information on: N-Methylpyrrolidone
Assessment of teratogenicity:
The substance caused malformations/developmental toxicity in laboratory animals.

Other relevant toxicity information

Misuse can be harmful to health. The product has not been tested. The statements on toxicology have been derived from products of a similar structure and composition.



The product contains: pendimethalin
May produce an allergic reaction.

12. Ecological Information

Ecotoxicity

Information on: imazethapyr

Toxicity to fish:

LC50 (96 h) 340 mg/l, Oncorhynchus mykiss (OPP 72-1 (EPA-Guideline), static)

Information on: pendimethalin

Toxicity to fish:

LC50 (96 h) 0.138 mg/l, Oncorhynchus mykiss (static)

Information on: imazethapyr

Aquatic invertebrates:

LC50 (48 h) > 1,000 mg/l, Daphnia magna

Information on: pendimethalin

Aquatic invertebrates:

EC50 (48 h) 0.4 mg/l, Daphnia magna (static)

Information on: imazethapyr

Aquatic plants:

EC50 (96 h) 71 mg/l, Selenastrum capricornutum (OECD Guideline 201, static)

EC50 (14 d) 0.01 mg/l (growth rate), Lemna gibba

Information on: pendimethalin

Aquatic plants:

EC50 (72 h) 0.0337 mg/l, Selenastrum capricornutum

EC50 (5 d) 0.005 mg/l, Skeletonema costatum (static)

Mobility

Assessment transport between environmental compartments:

No data available.

Persistence and degradability

Information on: Imazethapyr

Assessment biodegradation and elimination (H2O):

Not readily biodegradable (by OECD criteria).

Information on: pendimethalin

Assessment biodegradation and elimination (H2O):

Not readily biodegradable (by OECD criteria).



Bioaccumulation potential

Information on: Imazethapyr

Bioaccumulation potential:

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Additional information

Other ecotoxicological advice:

No data available for the preparation. Do not discharge product into the environment without control.

13. Disposal Considerations

Must be disposed of or incinerated in accordance with local regulations.

Contaminated packaging:

Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

14. Transport Information

Domestic transport:

Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHSM
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(contains PENDIMETHALIN 30%, SOLVENT NAPHTHA)

Sea transport

IMDG

Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHSM
Marine pollutant: YES
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(contains PENDIMETHALIN 30%, SOLVENT NAPHTHA)

Air transport

IATA/ICAO

Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHSM
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.



(CONTAINS PENDIMETHALIN 30%, SOLVENT NAPHTHA)

15. Regulatory Information

Regulations of the European union (Labelling)

EEC Directives:

Hazard symbol(s)	
T	Toxic.
N	Dangerous for the environment.
R-phrases(s)	
R61	May cause harm to the unborn child.
R65	Harmful: may cause lung damage if swallowed.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrases(s)	
S1/2	Keep locked-up and out of reach of children.
S13	Keep away from food, drink and animal feeding stuffs.
S20/21	When using do not eat, drink or smoke.
S29/35	Do not empty into drains, this material and its container must be disposed of in a safe way.
S53	Avoid exposure - obtain special instructions before use.
S57	Use appropriate container to avoid environmental contamination.
S62	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Hazard determining component(s) for labelling: IMAZETHAPYR, PENDIMETHALIN, SOLVENT NAPHTHA, N-METHYL-2-PYRROLIDONE

Other regulations

For the user of this plant-protective product applies: 'To avoid risks to man and the environment, comply with the instructions for use.' (Directive 1999/45/EC, Article 10, No. 1.2)

16. Other Information

Full text of hazard symbols and R-phrases if mentioned as hazardous components in chapter 2:

N	Dangerous for the environment.
Xi	Irritant.
T	Toxic.
Xn	Harmful.
50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
43	May cause sensitization by skin contact.



61	May cause harm to the unborn child.
36/37/38	Irritating to eyes, respiratory system and skin.
65	Harmful: may cause lung damage if swallowed.
66	Repeated exposure may cause skin dryness or cracking.
67	Vapours may cause drowsiness and dizziness.
10	Flammable.
38	Irritating to skin.
41	Risk of serious damage to eyes.
20	Harmful by inhalation.
51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
37	Irritating to respiratory system.

Vertical lines in the left hand margin indicate an amendment from the previous version.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.