



PATON FERTILIZERS PTY LTD  
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## MATERIAL SAFETY DATA SHEET

COMPANY DETAILS : MITSUBISHI KASEI CORPORATION  
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### IDENTIFICATION

Product Name : **IBDU**  
Other Names : isobutylidenediurea  
1.1-diureidoisobutane  
N,N''-(2-methylpropylidene)-bisurea  
UN Number : None allocated  
Dangerous Goods :  
Class And Subsidiary Risk : None allocated  
Hazchem code : None allocated  
Poisons Schedule Number : None allocated  
USE : Fertiliser

### PHYSICAL DESCRIPTION / PROPERTIES

Appearance : White granule/powder with no odour  
Melting point : 205°C (with decomposition)  
Vapour Pressure : Not available  
Specific Gravity : 1.3 g/cm<sup>3</sup>  
Flashpoint : 400 °C  
Flammability (%) : Not available  
Dust Exposure Limit : lower limit 120 g/m<sup>3</sup> air  
upper limit not available  
Solubility in Water : 2 - 3 g/l

### OTHER PROPERTIES

#### Stability and Reactivity

Decomposition by heat: Start to decompose at 140 °C. The decomposition process is extremely accelerated over 150°C. Decomposition products are NH<sub>3</sub>(gas), isobutyraldehyde and carbon dioxide.

Decomposition by mixture: When having contact with water. IBDU hydrolyzes producing urea and isobutyraldehyde gradually. Acid accelerates the hydrolysis.

## INGREDIENTS

CHEMICAL ENTITY	CAS NUMBER	PROPORTION
isobutylidenediurea	6104-30-9	> 95%
impurities		to 100 %

## HEALTH HAZARD INFORMATION

### Health Effects

<b>SWALLOWED</b>	:	No evidence for humans. This substance was used, to be fed to goats and cattle as nutrition.
<b>EYE</b>	:	Mild irritant.
<b>SKIN</b>	:	Not irritating to the skin.
<b>INHALED</b>	:	This substance has been in use since 1964 in Japan and there have been no reports in the literature of inhalation health effects in humans.
<b>CHRONIC</b>	:	Repeated feeding to cattle does not cause any adverse effects.

### First Aid

<b>SWALLOWED</b>	:	When a person swallows a large quantity of IBDU, give the victim a lot of water and try to get the victim to vomit.
<b>EYE</b>	:	Gently rinse the effected eyes with clean water for at least 15 minutes.
<b>SKIN</b>	:	Rinse with clean water.
<b>INHALED</b>	:	When a person inhaled a large amount of dust, remove the victim from the contamination to fresh air. Keep the victim warm and quiet. Consult doctor if symptoms persists.

<b>First Aid Facilities</b>	None
<b>Advice to doctor</b>	When swallowed, this substance will hydrolyze to produce urea and isobutyraldehyde. The acute toxicity of isobutyraldehyde; oral LD (rat) 3700 mg/kg.

## PRECAUTIONS FOR USE

<b>EXPOSURE STANDARDS</b>	:	There is no exposure standard allocated.
<b>ENGINEERING CONTROL</b>	:	Handle in an enclosed system, or use with local exhaust ventilation.
<b>PERSONAL PROTECTION</b>	:	Dust respirator is recommended. Safety glasses are recommended when eye contact is likely.
<b>FLAMMABILITY</b>	:	Prevent deposition of dust. Earth all containers to reduce the possibility of spark from static electricity.

## SAFE HANDLING INFORMATION

<b>STORAGE AND TRANSPORT :</b>	Keep in cool and dry place.
<b>SPILLS AND DISPOSAL :</b>	Sweep up, place in a bag and hold for waste disposal. Avoid raising dust.
	Disposal into sewage systems should be discouraged/ Incineration may produce NO <sub>3</sub> gas.
<b>FIRE / EXPLOSION HAZARD :</b>	May produce NO <sub>3</sub> gas.
<b>EXTINGUISHING MEASURE :</b>	Use water, or dry chemical powder.

## OTHER INFORMATION

### Animal toxicity information:

When 35g IBDU was fed together with 500 g fodder to a female goat weighing 31-32 kg, no health effect was observed.

IBDU was added to a fodder at the rate of 5-10% (w/w) and fed to 14 Holstein cows and 14 bulls for 6 months. Their blood and liver function was examined and no damage was found.

Tumorigenic data according to "REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES"

Oral;	mouse	TDLo	32 gm/kg/2OW-1
	rat	TDLo	64 gm/kg/2OW-1

### Environmental Effects

In contact with water, this substance hydrolyses and produce urea and isobutyraldehyde. Urea is biologically degraded into ammonia and carbon dioxide. Isobutyraldehyde volatilises or is biologically degraded into carbon dioxide.