ASTRA INDUSTRIAL COMPLEX CO., LTD. (**ASTRACHEM**)
P.O. BOX 30447, AL-KHOBAR 31952
KINGDOM OF SAUDI ARABIA
*www.astra-agri.com.sa*

أســتراكيـــم

# TECHNICAL DATA BULLETIN

PRODUCT TECHNICAL INFORMATION AND APPLICATIONS

## **TILLER®** 480SL

## *(GLYPHOSATE IPA 48% w/v)*

## 1. INTRODUCTION:

**Tiller** 480SL: A broad-spectrum non-selective systemic herbicide formulation, containing 480 g / L of the active ingredient Glyphosate as Isopropylamine salt. It is absorbed by the foliage, with rapid translocation throughout the plant. Inactivated on contact with soil. It is used for the control of annual and perennial grasses and broad-leaved weeds, pre-harvest, post-planting/pre-emergence and in stubble, in cereals, peas, beans, oilseed rape, flax and mustard; as a directed spray in vines and olives; in orchards, pasture, forestry and industrial weed control. As an aquatic herbicide, and can be used on non-cropland and among a great variety of other crops.

## 2. ACTIVE INGREDIENT:

| **Common name** | **Glyphosate** |
|---|---|
| CAS Registry No. | 1071-83-6 |
| Chemical Group | **HRAC** G **WSSA** 9; glycine derivative |
| Molecular Formula | $C_3H_8NO_5P$ |
| Structural Formula | $HO_2CCH_2NHCH_2\overset{O}{\overset{\|\|}{P}}(OH)_2$ |
| Molecular weight | 169.1 |
| Vapour Pressure | 1.31 X $10^{-2}$ mPa (25 °C) |
| $K_{ow}$ log P | <-3.2 (pH 2-5, 20 °C), |
| Acute oral $LD_{50,}$Rat (a.i.) | 5600 mg/kg |

## 3. PHYSIOCHEMICAL PROPERTIES OF THE PRODUCT:

| | |
|---|---|
| Assay: | *"**Glyphosate** Isopropylamine Salt " 480 g/L* |
| Appearance | Clear yellow viscous liquid free of visible impurities |
| Odour | Faint amine odour |
| Boiling Point | > 100 C |
| Density | 1.154 – 1.166 Kg/L |
| pH | 4.4 – 5.0 |

## 4. MODE OF ACTION:

**Tiller** 480SL is a non-selective systemic herbicide, absorbed by the foliage, with rapid translocation throughout the plant. Inactivated on contact with soil. Acts by inhibiting 5-enolpyruvylshikimate-3-phosphate synthase (EPSPS), an enzyme of the aromatic acid biosynthetic pathway. This prevents synthesis of essential aromatic amino acids needed for protein biosynthesis.

## 5. COMPATIBILITY:

Mixing with other herbicides may reduce the activity of Tiller.

Tiller 480SL can be mixed with simazine, terbuthylazine, 2,4-D and alcohol. However, small mixture should be made and tried before mixing large quantities.

## 6. USES:

Tiller 480SL is a broad-spectrum, non-selective systemic herbicide. It is useful on essentially all annual and perennial plants including grasses, sedges, broad-leaved weeds and woody plants. It can be used on non-cropland and among a great variety of crops.

## 7. APPLICATION:

Tiller 480SL is effective on deep-rooted perennial species, and annual and biennial species of grasses. it is used in fruit orchards, vineyards, confier plantations, and many plantation crops (cofee, tea bananas, rubber, coconut, palms cocoa, mangoes).

Tiller 480 SL is post-weed-emergence but pre-crop-emergence in a wide range of crops including beat, alfalfa, okra Soya beans, figs, olives, cucurbits, cotton, wheat and Barley.

Tiller 480SL is applied at the rate of 2 – 12 liters product per hectare depending on the type of weeds to be controlled and the level of weeds infestation. It is applied by ground application equipment using a spray volume of 150 – 300 liters per hectare.

| Target Areas | Weeds | Application Rate | Harvest Interval |
|---|---|---|---|
| Fruit Trees | Annual Weeds | 0.9 – 1.1 L/100 L water | 30 days |
| | Perennial Weeds | 1.8 – 2.2 L/100 L water | |
| Crop Lands | Annual Weeds | 2.2 – 4.2 L/ha | |
| | Perennial Weeds | 4.2 – 6.4 L/ha | |
| Non-cropped Lands | All plants | 6.5 – 8.5 L/ha<br>1.7 – 2 L/100 L water | |

## 8. HANDLING, STORAGE AND TRANSPORTATION:

**Tiller** 480SL should be transported its original labeled, tightly closed container and stored in a dry well ventilated store at room temperature and away from direct sunlight. It should also be kept away from children, animals, food, feed and drinks and unauthorized personnel. Personnel involved in handling this material should wear protective gloves, clean protective clothing and a facemask.